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Primary production on Georges Bank - August 1988

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February 1990

Canadian Data Report of Fisheries and Aquatic Sciences No. 785

Fisheries and Oceans
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Canadian Data Report of Fisheries and Aquatic Sciences

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90-03396/

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Cat. No. Fs 97-13/785E ISSN 0706-6465

Correct citation for this publication:

B. Irwin, J. Anning, C. Caverhill, A. Macdonald and T. Platt. 1990. Primary production on Georges Bank - August 1988. Can. Data Rep. Fish. Aquat. Sci. No. 785: iv + 197 p.

ABSTRACT

B. Irwin, J. Anning, C. Caverhill, A. Macdonald and T. Platt. 1990. Primary production on Georges Bank - August 1988. Can. Data Rep. Fish. Aquat. Sci. No. 785: iv + 197 p.

During the period 15-31 August 1988, primary productivity and other related variables were measured on Georges Bank. In this report, we make available the raw data and some fitted parameters.

RESUME

B. Irwin, J. Anning, C. Caverhill, A. Macdonald and T. Platt. 1990. Primary production on Georges Bank - August 1988. Can. Data Rep. Fish. Aquat. Sci. No. 785: iv + 197 p.

Pendant la période du 15 au 31 août 1988, la production primaire et plusiers autres variables ont été mesurée sur "Georges Bank". Dans ce rapport nous présentons les données brutes ainsi que les paramètres calculés.

Abstract/Résumé iii

Introduction 1

Sampling 1

Methods 1

Productivity - P.I. Experiments 1

Chlorophyll 1

Organic Particulates 1

Nutrients 2

Incubation Light 2

Estimation of Photosynthetic Parameters 2

Acknowledgements 2

References 3

Location of Sampling Stations 5

Profile Data 7

Light Saturation Data and Related
Biomass and Nutrient Data 35

Solid Line Fit to PI Data 115

INTRODUCTION

This cruise was a continuation of the experiments conducted in 1985 (Irwin et al. 1987). A series of stations were occupied across the tidal front on the North East side of Georges Bank. *In situ* primary productivity experiments were not attempted because of the strong tidal currents.

SAMPLING

All water samples were collected with 12 or 30 *l* Niskin bottles. Sampling depths were 1, 5, 10, 15, 20, 25, 30, 35, 40, 50, 75 and 100 m where water depths permitted. Samples were collected at 0800 and 1500 hours each day the ship was on station.

METHODS

Productivity - P.I. Experiments

Primary productivity was measured using the ^{14}C method essentially as described by Strickland and Parsons (1972). 40 µCi of sodium bicarbonate ^{14}C was added to each of 42 light and 2 dark bottles for each experiment. Bottles were incubated in temperature controlled incubators illuminated by 250 w tungsten halogen lamps. All incubations were of two hours duration. All samples were filtered onto Whatman GF/F filters.

Chlorophyll

Replicate 100 mls of sample were filtered onto 25 mm Whatman GF/F filters. Chlorophyll was extracted for 24 hours with 85% acetone at 0°C in the dark. The fluorometric technique of Yentsch and Menzel (1963) as modified by Holm Hansen et al. (1965) was used to estimate chlorophyll concentration.

Organic Particulates

Samples for particulate organic carbon and organic nitrogen were filtered onto precombusted 25 mm Whatman GF/F filters. Filters were analyzed by combustion in a Perkin Elmer Model 10 CHN analyzer.

Nutrients

Samples for nitrate, silicate and inorganic phosphate were collected from most sampled depths. Samples were analyzed immediately after collection using a Technicon II Autoanalyzer. Nitrate was measured using industrial method 158-71W, silicate with method 186-72W and phosphate with method 155-71W.

Incubation Light

Photosynthetically Active Radiation (P.A.R.) was measured at each bottle position in the incubators with a Biospherical Instruments 4π quantum meter (Model Q.S.L. 100).

Estimation of Photosynthetic Parameters

Measurement of specific production P^B and irradiance I were used to estimate parameters in the equation of Platt et al. (1980),

$$P^B = P_S\,(1 - e^{-\alpha I/P_s})\,e^{-\beta I/P_s}$$

P_s (mg C mg Chl^{-1} h^{-1}) is the light saturated rate of photosynthesis in the absence of photoinhibition, α (mg C (mg Chl)$^{-1}$ h^{-1} w^{-1} m^{-2}) is the initial slope of the PI curve and β (same units as α) is a parameter that characterises photoinhibition. Complete details of the fitting routine are given in Irwin et al. (1982) and a discussion of the mathematical basis for this technique is given in Irwin et al. (1980).

ACKNOWLEDGEMENTS

We wish to thank Mark Hodgson and Heide Kirshner for their assistance during the cruise and in the analysis of samples after the cruise.

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LOCATION OF SAMPLING STATIONS

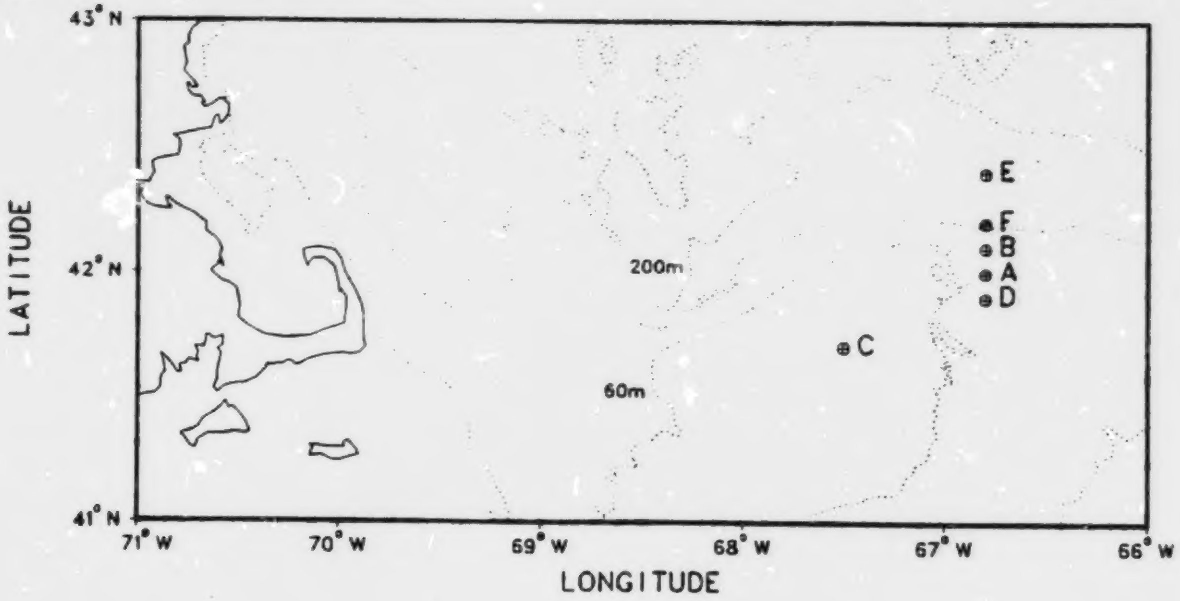


Fig. 1 Location of sampling stations:
A = Sta. 23, 34, 55, 65, 92;
B = Sta. 117, 124, 150, 161;
C = Sta. 179, 190, 209, 220;
D = Sta. 249, 253, 263, 268, 282;
E = Sta. 289, 313, 323, 347;
F = Sta. 353, 370, 378, 395

PROFILE DATA

UNITS

NO_3 =mg at m^{-3}

SIO_3 =mg at m^{-3}

PO_4 =mg at m^{-3}

Chl =mg m^{-3}

POC =mg m^{-3}

PON =mg m^{-3}

GEORGES BANK 1988

STATION NO. 23

LAT 41°58.80' N LONG 66°49.00' W DATE 17/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	1.80	.38	.46	1.30	.20	234	32
5	1.59	.27	.29	1.23	.21	206	32
10	1.52	.29	.18	1.16	.20	216	28
15	2.25	.53	.66	1.87	.26	238	32
20	1.88	.61	1.04	1.85	.33	218	32
25	2.23	.79	1.41	2.32	.39	267	36
30	2.34	.64	2.17	2.99	.44	224	32
35	1.54	.58	3.84	3.88	.55	176	28
40	1.39	.57	4.60	4.62	.61	210	29
50	1.38	.61	4.80	4.74	.62	202	34

GEORGES BANK 1988

STATION NO. 34

LAT 41°58.80' N LONG 66°49.00' W DATE 17/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	2.52	.38	.16	.00	.22	276	36
5	2.46	.37	.06	.00	.18	253	37
10	2.75	.36	.24	.00	.28	301	36
15	3.16	.52	.42	.00	.25	247	36
20	2.52	.66	1.18	.00	.36	260	36
25	2.52	.66	.52	.30	.33	182	28
30	1.93	.97	1.02	1.13	.39	178	29
35	1.71	.75	1.20	1.71	.43	202	27
40	1.64	.64	1.62	2.17	.44	218	30
50	1.68	.76	2.74	3.26	.49	186	28

GEORGES BANK 1988

STATION NO. 55

LAT 41°59.40' N   LONG 66°46.70' W   DATE 18/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	1.50	.38	.00	.38	.04	192	28
5	1.30	.27	.00	.26	.02	150	20
10	1.71	.42	.00	.28	.02	180	26
15	1.75	.30	.00	.29	.02	164	26
20	1.66	.28	.00	.32	.03	234	24
25	2.41	.37	.00	.28	.08	178	24
30	2.18	.35	.00	.29	.04	188	28
35	3.04	.35	.00	.32	.22	202	30
40	2.98	.62	.00	.36	.52	208	30
50	2.28	.69	.00	.47	.85	170	30

GEORGES BANK 1988

STATION NO. 65

LAT 41°59.00' N LONG 66°46.70' W DATE 18/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	2.07	.30	1.53	.29	.00	206	26
5	2.23	.29	1.63	.26	.00	260	32
10	2.47	.43	1.62	.34	.02	269	38
15	2.55	.57	2.03	.58	.66	252	32
20	2.54	.53	2.03	.41	.76	224	34
25	2.34	.57	2.70	.57	1.89	214	32
30	2.13	.57	2.89	.55	2.09	238	34
35	2.22	.50	3.02	.50	2.38	266	32
40	1.80	.55	3.46	.62	3.05	195	24
50	1.43	.60	3.74	.67	3.80	162	22

GEORGES BANK 1988

STATION NO. 92

LAT 41°59.00′ N LONG 66°47.00′ W DATE 19/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	1.29	.20	.29	1.09	.18	188	30
5	1.55	.28	.37	1.22	.20	168	26
10	1.73	.34	.60	1.43	.23	163	26
15	1.80	.70	1.05	1.78	.35	190	30
20	1.61	.33	.68	1.76	.27	180	30
25	2.00	.59	1.82	2.49	.40	219	26
30	1.70	.59	2.42	2.79	.44	187	24
35	1.54	.58	2.76	3.12	.47	195	26
40	1.48	.63	2.87	3.07	.48	162	18
50	1.45	.58	3.70	3.48	.53	175	20

GEORGES BANK 1988

STATION NO. 117

LAT 42^{0} 5.60' N LONG 66^{0}48.30' W DATE 20/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	.51	.08	.00	.18	.00	126	16
5	.46	.07	.00	.20	.00	144	20
10	1.73	.27	.00	.29	.52	190	28
15	-	-	.00	.45	1.69	168	20
20	1.82	.34	.00	.44	1.73	154	26
25	1.77	.45	.00	.54	2.49	199	20
30	1.50	.46	.00	.60	3.60	128	18
35	1.41	.47	.00	.64	4.13	163	22
40	1.30	.51	.00	.68	4.16	139	22
50	1.21	.45	.00	.65	4.44	134	19

GEORGES BANK 1988

STATION NO. 124

LAT 42° 5.20' N　　LONG 66°46.70' W　　DATE 20/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	.61	.06	.00	.16	.00	162	28
5	1.50	.12	.00	.19	.00	228	30
10	3.28	.47	.00	.29	.04	278	42
15	3.04	.28	.00	.26	.22	278	40
20	2.69	.63	.00	.42	1.75	192	30
25	2.81	.51	.00	.41	1.49	266	40
30	1.39	.42	.00	.63	4.39	124	14
35	1.23	.45	.00	.67	4.83	138	14
40	1.16	.46	.00	.66	4.87	146	18
50	.89	.51	.00	.72	5.84	142	18

GEORGES BANK 1988

STATION NO. 150

LAT 42° 4.60' N   LONG 66°46.30' W   DATE 21/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	.54	.09	1.21	.19	.00	118	17
5	.53	.06	1.21	.12	.00	114	14
10	.95	.18	1.28	.21	.00	120	14
15	.80	.21	1.24	.15	.00	146	22
20	1.91	.44	1.37	.27	.00	155	21
25	2.54	.36	1.61	.26	.14	174	26
30	3.39	.49	2.13	.36	.78	177	32
35	3.28	.33	2.45	.41	1.22	162	26
40	2.81	.58	2.71	.44	1.74	169	28
50	2.02	.48	3.20	.47	2.57	130	21

GEORGES BANK 1988

STATION NO. 161

LAT 42° 4.80' N LONG 66°46.70' W DATE 21/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	.91	.12	1.43	.41	.18	234	35
5	1.07	.16	1.38	.22	.00	174	26
10	1.68	.37	2.97	.41	2.12	172	28
15	1.70	.42	4.31	.66	4.48	128	19
20	1.46	.39	3.85	.55	3.98	173	20
25	1.09	.40	5.16	.79	6.28	116	16
30	1.00	.38	5.42	.76	6.55	108	16
35	.88	.44	5.69	.77	6.86	108	12
40	.86	.39	5.81	.78	6.94	134	-
50	.84	.41	5.82	.92	7.13	120	16

GEORGES BANK 1988

STATION NO. 179

LAT 41°42.70' N LONG 67°29.60' W DATE 22/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	3.51	.59	.70	.43	.05	228	37
5	3.16	.73	.69	.44	.03	191	28
10	3.28	.61	.71	.57	.13	218	32
15	3.34	.69	.69	.41	.04	179	24
20	3.45	.79	.69	.41	.04	212	34
25	3.28	.82	.69	.40	.04	186	36
30	3.51	.80	.69	.40	.04	168	22
35	3.28	.61	.69	.41	.06	178	29
40	3.39	.64	.70	.47	.08	196	30
50	2.98	1.04	.72	.42	.05	192	30

GEORGES BANK 1988

STATION NO. 190

LAT 41°41.20' N   LONG 67°30.60' W   DATE 22/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	3.63	.54	.75	.36	.04	212	32
5	3.63	.68	.73	.41	.04	224	36
10	3.63	.75	.76	.42	.05	209	33
15	3.74	.64	.77	.39	.05	302	46
20	3.80	.93	.80	.38	.09	212	32
25	3.86	.87	.79	.40	.06	210	32
30	3.74	.78	.83	.38	.10	195	33
35	3.63	.75	.86	.40	.11	190	36
40	3.63	.90	.88	.39	.12	184	26
50	3.86	.73	.89	.38	.14	188	26

GEORGES BANK 1988

STATION NO. 209

LAT 41°44.20' N LONG 67°29.50' W DATE 23/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	3.16	.94	.81	.40	.06	232	36
5	3.10	1.00	.89	.39	.06	193	29
10	3.39	.99	.89	.40	.05	180	21
15	3.22	.95	.94	.40	.06	201	27
20	2.93	.96	.90	.40	.05	198	31
25	3.22	1.09	.92	.39	.05	203	24
30	3.45	1.00	.94	.39	.05	207	30
35	3.22	.88	.95	.39	.05	218	33
40	3.28	.89	.95	.40	.08	204	25
50	3.34	.62	.96	.40	.06	205	32

GEORGES BANK 1988

STATION NO. 220

LAT 41°39.70' N LONG 67°30.20' W DATE 23/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	3.74	.43	.85	.45	.00	259	40
5	3.45	.72	1.30	.50	.00	272	50
10	3.92	.74	1.35	.60	.00	235	31
15	3.92	1.03	1.28	.49	.00	213	34
20	3.80	.72	1.22	.49	.00	236	32
25	3.57	.74	1.22	.52	.00	193	35
30	3.74	.78	.86	.47	.01	188	28
35	3.74	.85	1.18	.45	.02	190	31
40	3.45	.93	1.23	.43	.04	193	29
50	3.80	1.00	1.28	.48	.07	201	33

GEORGES BANK 1988

STATION NO. 249

LAT 41°53.60' N   LONG 66°48.85' W   DATE 24/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	3.57	.74	.88	.41	.02	228	38
5	3.57	.67	.91	.46	.03	230	32
10	3.51	.73	.57	.46	.03	212	32
15	3.57	.88	.72	.44	.02	232	34
20	3.63	.75	.78	.42	.01	214	36
25	3.51	.80	.90	.45	.01	218	34
30	3.74	.64	1.00	.45	.03	196	34
35	3.45	.72	.97	.40	.02	212	38
40	3.57	.67	.95	.41	.02	204	32
50	3.45	.86	.94	.43	.02	202	24

GEORGES BANK 1988

STATION NO. 253

LAT 41°53.60' N   LONG 66°48.90' W   DATE 24/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	3.16	.45	1.81	.42	.80	294	50
5	2.81	.51	1.82	.43	.56	224	38
10	3.16	.45	2.10	.47	.83	252	35
15	2.81	.58	1.84	.35	.79	191	30
20	2.98	.48	1.71	.33	.76	262	40
25	2.46	.72	2.22	.44	1.19	167	28
30	2.17	.80	2.49	.42	1.58	176	25
35	1.93	.90	2.70	.47	1.85	150	22
40	2.11	.72	2.74	.44	2.07	162	24
50	1.81	.87	3.42	.52	2.77	170	28

GEORGES BANK 1988

STATION NO. 263

LAT 41°53.60' N   LONG 66°48.90' W   DATE 25/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	4.21	.45	1.50	.31	.17	242	40
5	3.45	1.21	1.55	.31	.31	228	42
10	5.09	.42	1.30	.35	.21	246	40
15	4.45	.50	1.73	.32	.48	222	40
20	4.27	.39	1.83	.32	.46	234	40
25	3.80	.37	1.77	.32	.66	214	30
30	3.28	.33	2.89	.60	1.60	188	32
35	2.52	.52	2.64	.46	1.87	194	34
40	2.28	.69	3.21	.84	2.47	185	26
50	1.98	.74	3.08	.59	2.59	154	21

GEORGES BANK 1988

STATION NO. 268

LAT 41°53.60' N LONG 66°48.90' W DATE 25/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	2.25	.66	2.38	.44	1.41	234	40
5	2.23	.55	2.27	.40	1.45	239	40
10	2.18	.50	2.46	.46	1.47	194	32
15	2.07	.80	2.52	.47	1.57	222	36
20	2.34	.66	1.92	.41	1.46	226	38
25	6.67	2.09	2.54	.53	1.92	178	28
30	1.89	.80	2.46	.44	1.68	196	34
35	2.02	.66	2.76	.46	1.90	180	28
40	1.71	.68	2.87	.46	2.09	206	38
50	1.79	.63	3.24	.49	2.62	182	32

GEORGES BANK 1988

STATION NO. 282

LAT 41°53.60' N   LONG 66°48.90' W   DATE 26/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	3.45	.58	1.73	.29	.71	192	32
5	3.39	.42	2.02	.36	.18	266	48
10	3.45	.36	1.92	.36	.98	194	34
15	3.39	.56	2.57	.46	.92	222	35
20	3.45	.72	2.23	.45	1.11	234	36
25	3.04	.42	2.42	.45	1.51	273	-
30	2.75	.57	2.76	.46	1.97	190	36
35	2.69	.77	2.88	.45	2.10	176	30
40	2.46	.51	3.27	.50	2.60	176	25
50	2.17	.73	3.58	.53	2.97	165	26

GEORGES BANK 1988

STATION NO. 289

LAT 42°20.80' N LONG 66°43.70' W DATE 26/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	.59	.05	1.88	.19	.00	188	30
5	.60	.06	1.79	.16	.00	184	26
10	.64	.06	2.28	.26	.00	194	29
15	.78	.06	1.55	.16	.00	195	24
20	2.69	.28	1.96	.24	.00	250	36
25	1.91	.22	1.78	.20	.00	220	34
30	2.14	.58	2.68	.38	.34	206	34
35	1.23	.45	3.93	.58	3.96	136	26
40	.86	.46	4.05	.61	5.00	112	16
50	.41	.36	5.21	.76	7.01	76	10
75	.09	.17	6.83	.90	10.11	100	16
100	.04	.09	8.28	1.07	14.06	77	6

GEORGES BANK 1988

STATION NO. 313

LAT 42°20.80' N LONG 66°47.70' W DATE 27/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	.62	.04	1.95	.21	.00	158	26
5	.66	.06	1.95	.18	.00	170	20
10	.67	.09	2.14	.25	.00	162	24
15	.71	.12	2.14	.25	.00	164	16
20	1.50	.42	3.12	.38	.78	134	20
25	1.05	.28	2.76	.40	.92	191	29
30	.48	.30	4.67	.68	5.68	84	14
35	.30	.24	5.45	.82	7.62	64	4
40	.20	.18	6.42	.89	9.27	88	7
50	.09	.15	7.21	.99	10.81	64	6
75	.03	.09	9.20	1.13	14.28	62	4
100	.02	.08	9.20	1.18	16.51	42	3

GEORGES BANK 1988

STATION NO. 323

LAT 42°21.80' N LONG 66°46.20' W DATE 27/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	.51	.04	1.91	.23	.00	176	24
5	.48	.03	1.90	.23	.00	130	17
10	.68	.11	1.94	.23	.00	168	20
15	.86	.20	2.19	.23	.00	142	20
20	.98	.27	2.33	.25	.00	186	26
25	1.13	.39	2.94	.37	.75	166	18
30	.93	.41	3.35	.44	1.98	104	12
35	.84	.48	3.46	.53	2.95	102	10
40	.73	.41	3.64	.57	3.64	116	18
50	.49	.27	4.20	.66	5.34	94	16
75	.08	.10	6.64	.94	10.82	50	7
100	.05	.06	7.54	1.00	12.54	66	6

GEORGES BANK 1988

STATION NO. 347

LAT 42°20.70' N LONG 66°47.40' W DATE 28/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	.65	.05	.12	1.88	.18	144	16
5	.62	.05	.30	1.33	.15	122	21
10	.72	.05	.12	3.39	.28	166	24
15	.77	.10	.30	1.84	.22	130	16
20	.84	.09	.12	2.35	.22	160	20
25	1.95	.45	.12	3.38	.31	162	14
30	1.59	.57	1.57	4.41	.42	148	16
35	.96	.39	3.92	5.43	.57	110	12
40	.59	.47	5.31	5.77	.65	114	26
50	.23	.21	7.90	7.48	.69	58	9
75	.06	.12	12.42	11.42	.96	50	4
100	.03	.10	14.68	13.64	1.04	79	10

GEORGES BANK 1988

STATION NO. 353

LAT 42° 9.10' N LONG 66°46.80' W DATE 28/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	3.39	.42	2.11	4.39	.65	229	29
5	3.34	.62	1.38	3.40	.42	243	35
10	3.74	.43	1.38	2.42	.31	240	40
15	2.69	.63	3.74	5.55	.56	183	27
20	2.63	.76	3.19	4.56	.49	184	28
25	1.73	.58	5.37	6.67	.66	155	20
30	1.41	.53	6.45	7.74	.71	148	22
35	1.18	.42	7.30	8.80	.76	149	21
40	1.20	.49	8.80	9.38	1.06	155	20
50	.59	.45	11.25	11.46	1.04	154	18
75	.08	.23	13.96	15.12	1.13	148	23
100	.11	.25	12.91	13.09	.98	110	12

GEORGES BANK 1988

STATION NO. 370

LAT 42^{0} 8.00' N   LONG 66^{0}45.90' W   DATE 29/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	2.34	.63	2.30	.33	1.14	206	28
5	2.57	.46	2.79	.40	1.69	154	30
10	2.57	.46	3.19	.41	2.00	216	34
15	1.93	.51	4.98	.59	4.56	112	14
20	2.09	.46	4.30	.51	3.79	136	23
25	1.36	.43	5.97	.71	6.45	94	14
30	1.30	.34	3.84	.47	4.50	94	13
35	1.04	.32	4.52	.57	5.31	92	14
40	.98	.31	6.90	.81	7.93	120	12
50	.28	.20	6.23	.64	7.61	82	8
75	.04	.15	11.50	.92	11.91	100	7

GEORGES BANK 1988

STATION NO. 378

LAT 42° 9.30' N LONG 66°46.40' W DATE 29/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	2.81	.37	3.32	.43	1.32	250	40
5	2.93	.47	3.17	.40	.93	347	52
10	3.10	.29	3.40	.42	1.45	225	34
15	2.81	.51	3.40	.38	1.38	240	32
20	2.98	.41	3.85	.44	2.71	272	40
25	2.75	.57	4.26	.51	2.88	240	42
30	2.11	.59	5.32	.61	4.25	160	22
35	1.93	.60	4.75	.58	3.97	200	26
40	1.43	.56	5.50	.58	4.96	164	26
50	1.13	.56	7.83	.86	7.74	152	20
75	.64	.46	8.72	.83	9.00	114	18

GEORGES BANK 1988

STATION NO. 395

LAT 42° 9.20' N   LONG 66°46.40' W   DATE 30/08/88

Z	CHL	PHAE	NO3	SIO3	PO4	POC	PON
1	2.52	.38	3.80	.50	2.01	200	40
5	2.14	.40	3.27	.40	.96	254	40
10	2.45	.51	3.93	.58	2.87	192	32
15	2.11	.44	3.49	.41	2.12	214	30
20	1.71	.36	6.60	.75	5.72	158	22
25	1.63	.36	5.11	.67	4.51	194	26
30	1.00	.32	6.77	.82	7.01	100	14
35	.73	.26	8.42	.88	8.94	100	10
40	.31	.16	8.01	.94	9.22	82	6
50	.04	.10	10.46	.99	10.48	74	10
75	.04	.10	14.31	1.18	14.27	98	10

LIGHT SATURATION DATA AND RELATED BIOMASS AND NUTRIENT DATA

UNITS

P = mg C (mg chl)$^{-1}$ m^{-3} h^{-1}

I = W m^{-2}

P_s = mg C (mg chl)$^{-1}$ h^{-1}

α = mg C (mg chl)$^{-1}$ h^{-1} w^{-1} m^{-2}

β = mg C (mg chl)$^{-1}$ h^{-1} w^{-1} m^{-2}

Organic particulates are in mg m^{-3}. Inorganic nutrients are in mg at m^{-3}. The 90% confidence interval for P_s, α, β are shown in the closed brackets below the estimates for each parameter.

GEORGES BANK 1988

STATION NO. 23

LAT 41°58.8' N LONG 66°49.0' W DATE 17/08/88 DEPTH 1 M

I	P	I	P	I	P	I	P
315	4.57	223	3.97	199	4.29	179	4.30
163	4.05	140	3.82	72	3.87	62	3.61
62	3.33	54	3.09	52	3.19	48	2.68
46	2.76	44	2.20	42	2.38	42	1.77
40	2.00	36	1.73	20	1.30	18	1.02
16	.84	13	.74	12	.58	10	.49
8	.54	7	.48	6	.36	6	.28
6	.19	6	.15	3	.14	2	.07
2	.04	2	.06	2	.03	2	.04

PARAMETER VALUES

PS : 4.95 (3.99, 5.90)

ALPHA : .079 (.074, .084)

BETA : .0023 (-.0019, .0064)

SAMPLE TEMP 17.8°C INCUBATION TEMP 17.8°C

CHLOROPHYLL : 1.80 CARBON : 234 NITROGEN : 32

NITRATE : .46 SILICATE : 1.30 PHOSPHATE : .20

GEORGES BANK 1988

STATION NO. 23

LAT $41^{o}58.8'$ N LONG $66^{o}49.0'$ W DATE 17/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
538	5.03	411	5.24	351	5.06	307	5.04
271	4.83	231	4.79	151	4.77	120	4.32
106	3.83	88	3.28	86	3.20	80	2.72
42	2.37	35	1.82	32	1.50	30	1.36
25	1.06	25	.93	21	1.07	16	.83
15	.61	15	.44	14	.41	12	.37
7	.34	6	.17	6	.17	5	.16
5	.13	4	.09	3	.05	2	.03

PARAMETER VALUES

PS : 6.32 (5.48, 7.16)   ALPHA : .056 (.053, .058)   BETA : .0028 (.0006, .0050)

SAMPLE TEMP 16.0°C   INCUBATION TEMP 16.0°C

CHLOROPHYLL : 1.52   CARBON : 216   NITROGEN : 28

NITRATE : .18   SILICATE : 1.16   PHOSPHATE : .20

GEORGES BANK 1988

STATION NO. 23

LAT 41°58.8' N LONG 66°49.0' W DATE 17/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	2.69	379	3.76	287	4.11	267	3.79
199	3.98	120	3.57	88	3.32	77	3.03
66	2.60	56	2.39	46	2.14	41	1.80
30	1.40	26	.92	25	.88	20	.73
17	.69	9	.61	6	.46	6	.42
5	.33	5	.26	4	.27	3	.18
2	.11	2	.08	2	.06	2	.12
2	.10	1	.10	1	.09	1	.05

PARAMETER VALUES

PS : 7.42 (6.35, 8.49) ALPHA : .056 (.054, .058) BETA : .0128 (.0087, .0169)

SAMPLE TEMP 14.0°C INCUBATION TEMP 14.0°C

CHLOROPHYLL : 1.88 CARBON : 218 NITROGEN : 32

NITRATE : 1.04 SILICATE : 1.85 PHOSPHATE : .33

GEORGES BANK 1988

STATION NO. 34

LAT 41°58.8' N LONG 66°49.0' W DATE 17/08/88 DEPTH 5 M

I	P	I	P	I	P	I	P
315	3.90	223	3.57	199	3.71	179	3.78
163	3.69	72	3.23	62	3.08	62	3.05
54	2.40	52	2.25	46	2.25	44	1.77
42	1.84	42	1.51	40	1.67	36	1.17
20	.99	16	.59	13	.55	12	.39
10	.35	8	.27	7	.27	6	.22
6	.16	6	.10	3	.05	2	.03
2	.01						

PARAMETER VALUES

PS : 5.99 (3.11, 8.87)
ALPHA : .059 (.055, .063)
BETA : .0085 (-.0043, .0214)

SAMPLE TEMP 17.8°C INCUBATION TEMP 17.8°C

CHLOROPHYLL : 2.46 CARBON : 253 NITROGEN : 37

NITRATE : .06 SILICATE : .00 PHOSPHATE : .18

GEORGES BANK 1988

STATION NO. 34

LAT 41°58.8' N LONG 66°49.0' W DATE 17/08/88 DEPTH 15 M

I	P	I	P	I	P	I	P
538	3.80	411	4.05	351	3.91	307	4.06
271	3.75	151	3.77	120	3.68	106	3.32
88	2.93	86	2.75	80	2.32	42	1.33
35	1.47	32	1.29	25	.93	21	.95
16	.79	15	.52	15	.59	14	.39
12	.35	7	.30	6	.24	5	.13
5	.11	4	.04	3	.01	2	.05
2	.05	2	.06	2	.04	1	.02

PARAMETER VALUES

PS : 5.47 (4.69, 6.25)

ALPHA : .048 (.046; .050)

BETA : .0039 (.0017, .0062)

SAMPLE TEMP 16.0°C

INCUBATION TEMP 16.0°C

CHLOROPHYLL : 3.16

CARBON : 247

NITROGEN : 36

NITRATE : .42

SILICATE : .00

PHOSPHATE : .25

GEORGES BANK 1988

STATION NO. 34

LAT 41°58.8' N   LONG 66°49.0' W   DATE 17/08/88   DEPTH 25 M

I	P	I	P	I	P	I	P
578	2.50	379	2.85	267	3.00	247	2.89
199	2.68	88	2.16	77	2.41	66	2.29
56	2.00	46	1.70	41	1.45	30	1.05
26	.81	17	.54	9	.32	6	.23
5	.30	5	.25	4	.23	3	.09
2	.13	2	.05	2	.09	2	.10
2	.07	2	.08	2	.04	1	.05
1	.05	1	.04				

PARAMETER VALUES

PS : 3.41 (3.18, 3.65)   ALPHA : .049 (.047, .052)   BETA : .0018 (.0011, .0025)

SAMPLE TEMP 14.0°C   INCUBATION TEMP 14.0°C

CHLOROPHYLL : 2.52   CARBON : 182   NITROGEN : 28

NITRATE : .52   SILICATE : .30   PHOSPHATE : .33

GEORGES BANK 1988

STATION NO. 55

LAT 41°59.4' N LONG 66°46.7' W DATE 18/08/88 DEPTH 5 M

I	P	I	P	I	P	I	P
315	4.30	223	4.42	199	4.35	179	4.12
72	3.61	62	3.28	62	2.54	54	2.75
52	3.01	48	2.38	46	2.45	44	2.13
42	2.03	42	1.53	40	1.71	18	.97
16	.61	13	.53	12	.42	8	.42
7	.37	6	.23	6	.22	6	.10
6	.15	3	.09	2	.04	2	.03
2	.02						

PARAMETER VALUES

PS : 8.03 (2.80, 13.25) ALPHA : .064 (.060, .069) BETA : .0146 (-.0087, .0379)

SAMPLE TEMP 17.0°C INCUBATION TEMP 17.0°C

CHLOROPHYLL : 1.30 CARBON : 150 NITROGEN : 20

NITRATE : .00 SILICATE : .26 PHOSPHATE : .02

GEORGES BANK 1988

STATION NO. 55

LAT 41°59.4' N   LONG 66°46.7' W   DATE 18/08/88   DEPTH 15 M

I	P	I	P	I	P	I	P
538	4.96	411	4.59	307	4.30	271	4.54
231	4.21	151	4.35	120	3.81	106	4.03
88	3.37	86	2.99	42	2.31	35	1.67
32	1.32	30	1.16	25	.76	25	.83
21	.97	16	.75	15	.58	15	.48
14	.38	12	.34	7	.26	6	.22
6	.17	5	.16	5	.11	4	.10
3	.08	2	.05	2	.03	2	.04
2	.03	1	.01				

PARAMETER VALUES

PS : 5.03 (4.41, 5.64)   ALPHA : .056 (.052, .059)   BETA : .0006 (-.0009, .0022)

SAMPLE TEMP 16.0°C   INCUBATION TEMP 16.0°C

CHLOROPHYLL : 1.75   CARBON : 164   NITROGEN : 26

NITRATE : .00   SILICATE : .29   PHOSPHATE : .02

GEORGES BANK 1988

STATION NO. 55

LAT 41°59.4' N LONG 66°46.7' W DATE 18/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
578	3.04	379	3.88	287	4.04	267	3.93
247	3.74	120	3.56	88	3.16	77	2.85
66	2.56	56	2.10	46	1.75	41	1.33
30	.96	26	.73	25	.54	6	.32
6	.25	5	.19	5	.15	4	.15
3	.10	2	.08	2	.06	2	.03
2	.06	2	.02	2	.05	2	.03
1	.03	1	.01	1	.00		

PARAMETER VALUES

PS :	7.28	ALPHA :	.048	BETA :	.0109
(5.65,	8.92)	(.046,	.051)	(.0053,	.0165)

SAMPLE TEMP 15.0°C INCUBATION TEMP 15.0°C

CHLOROPHYLL :	2.41	CARBON :	178	NITROGEN :	24
NITRATE :	.00	SILICATE :	.28	PHOSPHATE :	.08

GEORGES BANK 1988

STATION NO. 65

LAT 41°59.0' N   LONG 66°46.7' W   DATE 18/08/88   DEPTH 1 M

I	P	I	P	I	P	I	P
315	5.69	223	5.76	199	5.82	163	5.06
140	4.69	72	4.15	62	3.97	62	4.08
54	3.23	52	3.61	46	2.75	44	2.18
42	2.43	42	1.89	40	1.93	20	1.18
18	1.08	16	.78	13	.54	12	.43
10	.40	8	.44	7	.37	6	.27
6	.22	6	.13	6	.17	3	.06
2	.06	2	.03	2	.01	2	.02
2	.02						

PARAMETER VALUES

PS : 9.50 (3.62, 15.38)   ALPHA : .074 (.069, .079)   BETA : .0132 (-.0102, .0366)

SAMPLE TEMP 18.0°C   INCUBATION TEMP 18.0°C

CHLOROPHYLL : 2.07   CARBON : 206   NITROGEN : 26

NITRATE : 1.53   SILICATE : .29   PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 65

LAT 41°59.0' N   LONG 66°46.7' W   DATE 18/08/88   DEPTH 10 M

I	P	I	P	I	P	I	P
538	5.91	411	5.54	351	5.38	307	4.88
271	5.10	231	4.84	151	4.81	120	4.63
106	4.05	88	3.36	86	3.00	80	2.43
42	1.49	35	1.96	32	1.49	30	1.24
25	.99	25	.70	16	.79	15	.62
14	.37	12	.27	7	.31	6	.18
6	.16	5	.08	4	.06	3	.03

PARAMETER VALUES

PS : 5.69 (4.69, 6.68)   ALPHA : .053 (.049, .058)   BETA : .0000 (-.0022, .0022)

SAMPLE TEMP 17.0°C   INCUBATION TEMP 17.0°C

CHLOROPHYLL : 2.47   CARBON : 269   NITROGEN : 38

NITRATE : 1.62   SILICATE : .34   PHOSPHATE : .02

GEORGES BANK 1988

STATION NO. 65

LAT 41°59.0' N LONG 66°46.7' W DATE 18/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	3.30	379	3.42	287	3.07	267	3.05
247	2.98	199	2.99	120	2.81	88	2.47
77	2.23	66	2.05	56	1.67	46	1.39
41	1.17	30	.87	26	.66	25	.56
20	.49	17	.44	6	.26	5	.15
5	.16	4	.12	3	.11	2	.09
2	.07	2	.05	2	.04	2	.07

PARAMETER VALUES

PS : 3.36 (3.07, 3.66) ALPHA : .040 (.038, .043) BETA : .0002 (-.0006, .0009)

SAMPLE TEMP 15.0°C INCUBATION TEMP 15.0°C

CHLOROPHYLL : 2.54 CARBON : 224 NITROGEN : 34

NITRATE : 2.03 SILICATE : .41 PHOSPHATE : .76

GEORGES BANK 1988

STATION NO. 92

LAT 41°59.0' N LONG 66°47.0' W DATE 19/08/88 DEPTH 1 M

I	P	I	P	I	P	I	P
315	5.43	223	5.16	199	5.38	179	5.32
163	5.14	140	4.67	72	3.72	62	3.99
62	3.86	54	3.23	52	3.62	48	2.67
46	2.52	44	2.35	42	2.18	42	1.94
40	1.91	36	1.71	20	1.30	18	1.09
16	1.11	13	.61	12	.62	10	.43
8	.56	7	.49	6	.34	6	.23
6	.21	6	.19	2	.05	2	.05
2	.05	2	.04				

PARAMETER VALUES

PS : 8.33 (4.81, 11.86)

ALPHA : .074 (.069, .078)

BETA : .0105 (-.0040, .0249)

SAMPLE TEMP 17.7°C INCUBATION TEMP 17.7°C

CHLOROPHYLL : 1.29 CARBON : 188 NITROGEN : 30

NITRATE : .29 SILICATE : 1.09 PHOSPHATE : .18

GEORGES BANK 1988

STATION NO. 92

LAT 41°59.0' N   LONG 66°47.0' W   DATE 19/08/88   DEPTH 10 M

I	P	I	P	I	P	I	P
538	4.70	411	4.73	351	4.58	307	4.45
271	4.26	231	4.30	151	4.52	120	4.03
88	3.21	86	2.55	80	2.32	42	1.94
35	1.51	32	1.02	30	.93	25	.65
25	.71	16	.63	15	.49	15	.39
14	.31	12	.31	7	.25	6	.19
6	.13	5	.10	5	.10	4	.11
3	.05	2	.03	2	.02	2	.02
2	.03	1	.03				

PARAMETER VALUES

PS : 6.02 (4.68, 7.36)   ALPHA : .046 (.043, .049)   BETA : .0030 (-.0004, .0064)

SAMPLE TEMP 17.6°C   INCUBATION TEMP 17.6°C

CHLOROPHYLL : 1.73   CARBON : 163   NITROGEN : 26

NITRATE : .60   SILICATE : 1.43   PHOSPHATE : .23

GEORGES BANK 1988

STATION NO. 92

LAT 41°59.0' N LONG 66°47.0' W DATE 19/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	3.75	379	3.94	287	3.82	267	3.99
247	3.91	199	3.72	120	3.45	88	3.45
77	2.74	66	2.12	56	2.07	46	1.75
41	1.36	30	1.11	26	.85	12	.66
9	.59	6	.43	6	.42	5	.33
5	.34	4	.21	3	.13	2	.11
2	.09	2	.08	2	.08	2	.08
2	.05	2	.05	1	.03	1	.03
1	.05						

PARAMETER VALUES

PS : 4.65 (4.24, 5.05)

ALPHA : .052 (.050, .055)

BETA : .0018 (.0007, .0030)

SAMPLE TEMP 16.0°C INCUBATION TEMP 16.0°C

CHLOROPHYLL : 1.61 CARBON : 180 NITROGEN : 30

NITRATE : .68 SILICATE : 1.76 PHOSPHATE : .27

GEORGES BANK 1988

STATION NO. 117

LAT 42° 5.6' N   LONG 66°48.3' W   DATE 20/08/88   DEPTH 1 M

I	P	I	P	I	P	I	P
315	3.63	223	3.58	199	3.63	179	3.54
163	3.47	72	3.01	62	2.62	62	2.54
54	2.22	52	2.32	48	1.89	46	2.08
44	1.63	42	1.74	42	1.42	40	1.34
36	1.20	20	.91	18	.84	16	.58
13	.45	12	.41	10	.26	8	.37
7	.24	6	.22	6	.19	6	.13
6	.20	3	.04	2	.08		

PARAMETER VALUES

PS : 6.50   ALPHA : .053   BETA : .0111
(3.13, 9.86)   (.050, .056)   (-.0037, .0259)

SAMPLE TEMP 17.7°C   INCUBATION TEMP 17.7°C

CHLOROPHYLL : .51   CARBON : 126   NITROGEN : 16

NITRATE : .00   SILICATE : .18   PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 117

LAT 42^{0} 5.6' N   LONG 66^{0}48.3' W   DATE 20/08/88   DEPTH 10 M

I	P	I	P	I	P	I	P
538	3.41	411	4.49	351	4.34	307	4.30
271	4.19	231	4.10	151	4.32	120	4.00
106	3.73	88	3.17	86	2.70	42	2.13
35	1.64	32	1.34	30	1.08	25	.76
25	.92	21	1.04	16	.76	15	.51
15	.62	14	.50	12	.33	7	.34
6	.25	6	.20	5	.15	5	.12
4	.11	3	.12	2	.06	2	.05
2	.05	2	.04	1	.05		

PARAMETER VALUES

PS : 8.87   ALPHA : .051   BETA : .0146

(6.12, 11.62)   (.049, .054)   (.0051, .0241)

SAMPLE TEMP 17.2°C   INCUBATION TEMP 17.2°C

CHLOROPHYLL : 1.73   CARBON : 190   NITROGEN : 28

NITRATE : .00   SILICATE : .29   PHOSPHATE : .52

GEORGES BANK 1988

STATION NO. 117

LAT 42° 5.6' N LONG 66°48.3' W DATE 20/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	3.41	379	3.41	287	3.40	267	3.65
247	3.46	199	3.35	120	3.49	88	3.23
77	2.73	66	2.44	56	1.95	46	1.77
41	1.47	30	1.16	26	.96	25	.77
12	.73	9	.63	6	.43	6	.33
5	.27	5	.26	3	.18	2	.12
2	.08	2	.07	2	.07	2	.04
2	.06	1	.05	1	.05	1	.03

PARAMETER VALUES

PS : 4.07 (3.74, 4.39) ALPHA : .055 (.053, .058) BETA : .0015 (.0006, .0025)

SAMPLE TEMP 16.0°C INCUBATION TEMP 16.0°C

CHLOROPHYLL : 1.82 CARBON : 154 NITROGEN : 26

NITRATE : .00 SILICATE : .44 PHOSPHATE : 1.73

GEORGES BANK 1988

STATION NO. 124

LAT 42^{0} 5.2' N LONG $66^{0}46.7'$ W DATE 20/08/88 DEPTH 5 M

I	P	I	P	I	P	I	P
315	4.42	223	4.37	179	4.08	163	3.90
140	3.64	72	3.70	62	3.27	62	3.12
54	2.71	52	2.72	48	2.16	46	2.23
44	1.83	42	1.98	42	1.51	40	1.64
36	1.38	20	1.12	18	.88	16	.65
13	.54	12	.39	10	.34	8	.18
7	.29	6	.19	6	.18	6	.12
6	.12	3	.05	2	.04	2	.03
2	.02						

PARAMETER VALUES

PS : 5.74 (3.51, 7.97)   ALPHA : .062 (.057, .067)   BETA : .0047 (-.0041, .0135)

SAMPLE TEMP 18.0°C   INCUBATION TEMP 18.0°C

CHLOROPHYLL : 1.50   CARBON : 228   NITROGEN : 30

NITRATE : .00   SILICATE : .19   PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 124

LAT 42° 5.2' N   LONG 66°46.7' W   DATE 20/08/88   DEPTH 15 M

I	P	I	P	I	P	I	P
538	2.05	411	2.35	351	2.38	307	2.65
271	2.62	231	2.61	151	2.68	120	2.61
106	2.50	88	2.07	86	2.24	80	1.65
42	1.25	35	1.40	32	1.27	30	1.01
25	.77	25	.64	21	.73	16	.50
15	.44	15	.34	14	.32	7	.26
6	.16	6	.13	5	.10	5	.06
4	.07	3	.07	2	.04	2	.02
2	.06	1	.05				

PARAMETER VALUES

PS : 4.41 (3.70, 5.12)   ALPHA : .039 (.038, .041)   BETA : .0066 (.0039, .0092)

SAMPLE TEMP 13.0°C   INCUBATION TEMP 13.0°C

CHLOROPHYLL : 3.04   CARBON : 278   NITROGEN : 40

NITRATE : .00   SILICATE : .26   PHOSPHATE : .22

GEORGES BANK 1988

STATION NO. 124

LAT 42° 5.2' N LONG 66°46.7' W DATE 20/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
578	.66	379	1.16	287	1.34	267	1.50
247	1.57	199	1.78	120	1.78	88	1.89
66	1.76	56	1.65	46	1.35	41	1.28
30	.99	26	.77	25	.67	20	.50
17	.47	9	.47	6	.33	6	.27
5	.19	5	.16	4	.18	3	.12
2	.10	2	.07	2	.07	2	.04
2	.07	2	.05	2	.05	1	.03
1	.03	1	.03				

PARAMETER VALUES

PS : 3.60 ALPHA : .043 BETA : .0111

(3.09, 4.12) (.041, .045) (.0080, .0142)

SAMPLE TEMP 9.0°C INCUBATION TEMP 9.0°C

CHLOROPHYLL : 2.81 CARBON : 266 NITROGEN : 40

NITRATE : .00 SILICATE : .41 PHOSPHATE : 1.49

GEORGES BANK 1988

STATION NO. 150

LAT 42° 4.6' N LONG 66°46.3' W DATE 21/08/88 DEPTH 5 M

I	P	I	P	I	P	I	P
315	4.37	223	4.51	199	4.30	179	4.02
163	3.64	72	3.29	62	3.06	62	3.12
54	1.91	52	2.55	48	2.33	46	2.08
44	1.91	42	1.80	42	1.59	40	1.60
36	1.49	20	1.01	16	.63	13	.48
12	.38	10	.35	8	.34	7	.22
6	.18	6	.13	6	.09	6	.08
3	.03						

PARAMETER VALUES

PS : 6.12 (3.24, 8.99)

ALPHA : .057 (.053, .062)

BETA : .0058 (-.0053, .0169)

SAMPLE TEMP 19.0°C

INCUBATION TEMP 19.0°C

CHLOROPHYLL : .53

CARBON : 114

NITROGEN : 14

NITRATE : 1.21

SILICATE : .12

PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 150

LAT 42° 4.6' N   LONG 66°46.3' W   DATE 21/08/88   DEPTH 15 M

I	P	I	P	I	P	I	P
538	4.45	411	4.12	351	3.76	307	4.02
271	4.05	231	3.89	120	4.01	106	3.46
88	3.09	86	2.74	80	2.55	42	2.18
35	1.64	32	1.35	30	1.09	25	.90
21	.76	16	.68	15	.53	15	.44
14	.29	12	.28	7	.25	6	.20
6	.11	5	.08	5	.04	4	.03

PARAMETER VALUES

PS : 4.40   ALPHA : .054   BETA : .0005

(3.80, 4.99)   (.050, .058)   (-.0010, .0020)

SAMPLE TEMP 15.0°C   INCUBATION TEMP 15.0°C

CHLOROPHYLL : .80   CARBON : 146   NITROGEN : 22

NITRATE : 1.24   SILICATE : .15   PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 150

LAT 42° 4.6' N LONG 66°46.3' W DATE 21/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
578	2.13	379	2.97	287	3.21	267	2.96
247	3.13	120	2.75	77	2.66	66	2.17
56	2.02	46	1.75	41	1.47	30	1.22
12	.62	9	.49	6	.43	6	.28
5	.29	5	.21	4	.23	3	.18
2	.16	2	.11	2	.12	2	.06
2	.08	2	.09	2	.08	1	.06
1	.05	1	.06				

PARAMETER VALUES

PS : 4.62 (4.30, 4.94)

ALPHA : .051 (.050, .053)

BETA : .0059 (.0047, .0071)

SAMPLE TEMP 13.0°C

INCUBATION TEMP 13.0°C

CHLOROPHYLL : 2.54

CARBON : 174

NITROGEN : 26

NITRATE : 1.61

SILICATE : .26

PHOSPHATE : .14

GEORGES BANK 1988

STATION NO. 161

LAT 42^{0} 4.8' N LONG 66^{0}46.7' W DATE 21/08/88 DEPTH 1 M

I	P	I	P	I	P	I	P
315	5.27	223	4.79	199	4.64	179	4.15
163	4.24	140	3.76	72	3.46	62	3.03
62	2.71	54	2.43	52	2.49	48	2.01
46	2.11	44	1.59	42	1.70	42	1.33
40	1.47	36	1.24	20	.79	18	.61
16	.44	13	.37	12	.29	10	.22
8	.27	7	.23	6	.18	6	.10
6	.09	6	.06	3	.04	2	.02
2	.00	2	.00				

PARAMETER VALUES

PS : 5.57 (3.26, 7.89)

ALPHA : .052 (.048, .056)

BETA : .0004 (-.0064, .0072)

SAMPLE TEMP 19.5°C INCUBATION TEMP 19.5°C

CHLOROPHYLL : .91 CARBON : 234 NITROGEN : 35

NITRATE : 1.43 SILICATE : .41 PHOSPHATE : .18

GEORGES BANK 1988

STATION NO. 161

LAT 42^{0} 4.8' N LONG 66^{0}46.7' W DATE 21/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
538	2.45	411	2.91	351	3.05	307	2.74
271	2.81	231	3.05	151	3.04	120	2.60
106	2.56	88	2.42	86	2.15	80	1.84
42	1.89	35	1.39	32	1.17	30	.92
25	.80	21	.89	16	.60	15	.37
15	.53	14	.34	12	.29	7	.25
6	.18	6	.16	5	.10	5	.07
4	.09	3	.07	2	.04	2	.03
2	.03	2	.02	1	.02		

PARAMETER VALUES

PS : 4.12 (3.57, 4.67)

ALPHA : .043 (.040, .045)

BETA : .0038 (.0020, .0057)

SAMPLE TEMP 17.0°C INCUBATION TEMP 17.0°C

CHLOROPHYLL : 1.68 CARBON : 172 NITROGEN : 28

NITRATE : 2.97 SILICATE : .41 PHOSPHATE : 2.12

GEORGES BANK 1988

STATION NO. 161

LAT 42° 4.8' N LONG 66°46.7' W DATE 21/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	.86	379	1.00	287	1.31	267	1.60
247	1.49	199	1.61	120	1.58	88	1.76
77	1.69	66	1.58	56	1.38	46	1.14
41	1.11	26	.74	12	.64	9	.54
6	.32	6	.28	5	.19	5	.15
4	.18	2	.08	2	.05	2	.04
2	.12	2	.02	2	.03	2	.04

PARAMETER VALUES

PS : 2.45	ALPHA : .045	BETA : .0049
(2.22, 2.68)	(.042, .048)	(.0036, .0061)

SAMPLE TEMP $9.0^{o}C$ INCUBATION TEMP $9.0^{o}C$

CHLOROPHYLL : 1.46	CARBON : 173	NITROGEN : 20
NITRATE : 3.85	SILICATE : .55	PHOSPHATE : 3.98

GEORGES BANK 1988

STATION NO. 179

LAT 41°42.7' N   LONG 67°29.6' W   DATE 22/08/88   DEPTH 1 M

I	P	I	P	I	P	I	P
315	4.57	223	4.42	199	4.13	179	4.29
163	4.17	140	3.71	72	3.65	62	3.24
62	2.86	54	2.48	52	2.65	48	2.20
46	2.27	44	1.44	42	2.32	42	1.60
40	1.73	36	1.55	20	.96	18	.62
16	.73	13	.60	12	.43	10	.41
8	.35	7	.39	6	.33	6	.29
6	.21	6	.14	3	.09	2	.05
2	.05	2	.04	2	.02	2	.02

PARAMETER VALUES

PS : 5.72 (3.84, 7.60)   ALPHA : .061 (.057, .065)   BETA : .0040 (-.0032, .0113)

SAMPLE TEMP 17.1°C   INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.51   CARBON : 228   NITROGEN : 37

NITRATE : .70   SILICATE : .43   PHOSPHATE : .05

GEORGES BANK 1988

STATION NO. 179

LAT $41^{o}42.7'$ N LONG $67^{o}29.6'$ W DATE 22/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
538	4.42	411	4.90	351	4.82	307	4.72
271	4.53	231	4.52	151	4.30	120	3.22
106	3.54	88	3.29	86	2.78	42	2.31
35	1.73	32	1.46	30	1.09	25	.85
25	.92	21	1.05	16	.73	15	.47
15	.59	14	.40	12	.38	7	.33
6	.20	6	.18	5	.12	5	.10
4	.09	3	.07	2	.04	2	.05
2	.03	2	.04	1	.04		

PARAMETER VALUES

PS : 6.34 (5.37, 7.30)
ALPHA : .050 (.048, .052)
BETA : .0039 (.0013, .0065)

SAMPLE TEMP 17.1°C INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.28 CARBON : 218 NITROGEN : 32

NITRATE : .71 SILICATE : .57 PHOSPHATE : .13

GEORGES BANK 1988

STATION NO. 179

LAT 41°42.7' N   LONG 67°29.6' W   DATE 22/08/88   DEPTH 20 M

I	P	I	P	I	P	I	P
578	3.71	379	3.90	287	3.65	267	4.12
247	3.60	199	3.59	120	3.26	88	2.68
77	2.81	66	1.92	56	1.63	46	1.64
41	1.35	30	.85	26	.77	20	.61
17	.46	6	.33	5	.15	5	.21
4	.13	3	.14	2	.03	2	.07
2	.05	2	.09	2	.04	2	.07
2	.05	1	.04	1	.03	1	.00

PARAMETER VALUES

PS : 4.83 (4.27, 5.39)   ALPHA : .043 (.041, .045)   BETA : .0023 (.0008, .0037)

SAMPLE TEMP 17.1°C   INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.45   CARBON : 212   NITROGEN : 34

NITRATE : .69   SILICATE : .41   PHOSPHATE : .04

GEORGES BANK 1988

STATION NO. 190

LAT 41°41.3' N   LONG 67°30.7' W   DATE 22/08/88   DEPTH 5 M

I	P	I	P	I	P	I	P
315	4.18	223	3.92	179	3.88	163	3.66
140	3.51	72	3.19	62	2.63	62	2.19
54	2.44	52	2.42	46	2.09	44	1.62
42	1.84	42	1.48	40	1.61	20	1.07
18	.68	16	.64	13	.55	12	.38
10	.32	8	.43	7	.28	6	.27
6	.14	6	.12	6	.17	3	.07
2	.03	2	.02	2	.01		

PARAMETER VALUES

PS : 4.92 (3.62, 6.21)   ALPHA : .055 (.052, .059)   BETA : .0025 (-.0023, .0072)

SAMPLE TEMP 17.1°C   INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.63   CARBON : 224   NITROGEN : 36

NITRATE : .73   SILICATE : .41   PHOSPHATE : .04

GEORGES BANK 1988

STATION NO. 190

LAT 41°41.3' N LONG 67°30.7' W DATE 22/08/88 DEPTH 15 M

I	P	I	P	I	P	I	P
538	4.59	411	3.91	351	4.32	307	4.37
271	4.38	151	4.02	120	3.46	106	3.44
88	2.85	86	2.54	80	2.14	42	2.20
35	1.72	32	1.27	30	1.10	25	.72
25	.85	21	.99	16	.73	15	.46
15	.54	14	.39	12	.29	7	.31
6	.21	6	.14	5	.10	5	.14
4	.07	3	.06	2	.03	2	.02
2	.02	2	.03	1	.03		

PARAMETER VALUES

PS : 5.16 (4.32, 5.99) ALPHA : .048 (.045, .051) BETA : .0017 (-.0004, .0038)

SAMPLE TEMP 17.1°C INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.74 CARBON : 302 NITROGEN : 46

NITRATE : .77 SILICATE : .39 PHOSPHATE : .05

GEORGES BANK 1988

STATION NO. 190

LAT 41°41.3' N LONG 67°30.7' W DATE 22/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
578	4.48	379	4.41	267	4.43	247	4.44
199	3.95	120	3.83	88	2.77	77	3.18
66	2.85	56	2.27	46	2.07	30	1.15
26	.92	12	.66	9	.58	6	.33
6	.30	5	.28	5	.23	4	.19
3	.12	2	.10	2	.08	2	.07
2	.06	2	.08	2	.05	1	.05
1	.05	1	.05				

PARAMETER VALUES

PS : 4.70 (4.39, 5.01)   ALPHA : .058 (.055, .060)   BETA : .0005 (-.0003, .0012)

SAMPLE TEMP 17.1°C   INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.86   CARBON : 210   NITROGEN : 32

NITRATE : .79   SILICATE : .40   PHOSPHATE : .06

GEORGES BANK 1988

STATION NO. 209

LAT 41°44.2' N LONG 67°29.5' W DATE 23/08/88 DEPTH 5 M

I	P	I	P	I	P	I	P
458	5.11	287	4.98	231	4.76	215	4.37
195	4.62	148	3.56	132	3.79	120	4.02
110	3.54	100	3.15	38	1.81	30	1.53
26	1.16	25	.76	24	1.31	24	.91
23	.78	22	1.03	20	.88	18	.66
18	.51	13	.65	10	.50	10	.44
9	.35	8	.28	7	.24	4	.15
3	.12	3	.09	3	.07	2	.06
2	.07						

PARAMETER VALUES

PS : 5.78 (4.90, 6.66) ALPHA : .049 (.047, .051) BETA : .0013 (-.0009, .0035)

SAMPLE TEMP 17.1°C INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.10 CARBON : 193 NITROGEN : 29

NITRATE : .89 SILICATE : .39 PHOSPHATE : .06

GEORGES BANK 1988

STATION NO. 209

LAT $41^{o}44.2'$ N LONG $67^{o}29.5'$ W DATE 23/08/88 DEPTH 15 M

I	P	I	P	I	P	I	P
351	3.97	307	4.69	271	3.51	231	3.69
120	3.63	106	4.18	88	3.86	86	3.34
80	2.88	42	2.51	35	2.15	32	1.72
30	1.17	25	.90	25	1.14	16	.93
15	.77	15	.58	14	.50	12	.46
7	.41	6	.33	6	.20	5	.11
5	.17	4	.11	3	.12	2	.08
2	.06	2	.05	2	.03		

PARAMETER VALUES

PS : 6.18 (3.53, 8.83)

ALPHA : .064 (.058, .070)

BETA : .0077 (-.0031, .0185)

SAMPLE TEMP $17.1^{o}C$ INCUBATION TEMP $17.1^{o}C$

CHLOROPHYLL : 3.22 CARBON : 201 NITROGEN : 27

NITRATE : .94 SILICATE : .40 PHOSPHATE : .06

GEORGES BANK 1988

STATION NO. 209

LAT 41°44.2' N LONG 67°29.5' W DATE 23/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
379	3.77	287	4.23	267	4.53	247	4.42
199	4.22	120	4.13	88	3.86	66	2.91
56	2.20	46	2.05	41	2.16	30	1.71
26	1.43	25	1.00	20	.87	17	.76
12	.62	9	.43	6	.40	6	.31
5	.25	5	.23	4	.18	3	.13
2	.11	2	.09	2	.07	2	.13
2	.05	2	.03	2	.05		

PARAMETER VALUES

PS : 18.61 (-9.66, 46.88)

ALPHA : .059 (.057, .062)

BETA : .0619 (-.0691, .1928)

SAMPLE TEMP 17.1°C

INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.22

CARBON : 203

NITROGEN : 24

NITRATE : .92

SILICATE : .39

PHOSPHATE : .05

GEORGES BANK 1988

STATION NO. 220

LAT 41°39.7' N LONG 67°30.2' W DATE 23/08/88 DEPTH 1 M

I	P	I	P	I	P	I	P
351	3.88	319	4.28	287	4.32	231	4.23
215	3.90	148	3.79	132	3.61	120	3.26
110	2.91	100	2.67	30	1.41	28	1.17
26	1.04	25	1.02	24	1.09	24	.88
20	.71	13	.51	10	.43	10	.36
9	.27	8	.22	7	.18	4	.08
3	.05	3	.06	3	.03	2	.03
2	.02						

PARAMETER VALUES

PS : 467.70	ALPHA : .043	BETA : 1.7166
(******,******)	(.040, .045)	(*******,*******)

SAMPLE TEMP 17.1°C INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.74	CARBON : 259	NITROGEN : 40
NITRATE : .85	SILICATE : .45	PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 220

LAT 41°39.7' N LONG 67°30.2' W DATE 23/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
411	4.09	351	4.40	307	4.13	271	4.02
231	3.95	151	4.08	120	3.84	106	3.42
88	2.86	86	2.71	80	2.43	35	1.82
32	1.46	30	1.19	25	.96	25	.80
21	1.00	16	.70	15	.53	15	.49
14	.39	12	.32	7	.30	6	.22
6	.14	5	.12	5	.09	4	.04
3	.05	2	.03	2	.03		

PARAMETER VALUES

PS : 7.22 (4.36, 10.09) ALPHA : .048 (.046, .051) BETA : .0092 (-.0005, .0188)

SAMPLE TEMP 17.1°C INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.92 CARBON : 235 NITROGEN : 31

NITRATE : 1.35 SILICATE : .60 PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 220

LAT 41°39.7' N LONG 67°30.2' W DATE 23/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	3.49	379	4.51	287	4.15	267	4.34
247	4.06	199	3.97	120	3.41	88	3.43
77	3.05	66	2.90	56	2.55	46	1.91
41	2.32	30	1.27	26	1.05	25	1.09
20	1.02	17	.76	12	.61	9	.40
6	.34	6	.28	5	.20	5	.15
4	.15	3	.10	2	.07	2	.06
2	.05	2	.08	2	.03	2	.05
2	.02	1	.02	1	.03	1	.01

PARAMETER VALUES

PS : 5.42 (4.97, 5.87) ALPHA : .059 (.057, .062) BETA : .0038 (.0024, .0052)

SAMPLE TEMP 17.1°C INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.80 CARBON : 236 NITROGEN : 32

NITRATE : 1.22 SILICATE : .49 PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 249

LAT 41°53.6' N LONG 66°48.9' W DATE 24/08/88 DEPTH 1 M

I	P	I	P	I	P	I	P
458	4.59	351	4.26	319	4.33	287	4.41
231	4.35	215	3.70	195	4.06	132	3.19
120	3.67	110	2.82	100	2.98	38	1.95
30	1.47	26	1.37	24	1.26	23	.78
22	.82	20	.90	18	.68	18	.59
13	.35	10	.53	10	.42	9	.18
8	.29	7	.15	4	.18	3	.10
3	.08	3	.07	2	.08	2	.04

PARAMETER VALUES

PS : 4.49 (3.91, 5.07)

ALPHA : .049 (.046, .052)

BETA : .0000 (-.0015, .0015)

SAMPLE TEMP 17.1°C INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.57 CARBON : 228 NITROGEN : 38

NITRATE : .88 SILICATE : .41 PHOSPHATE : .02

GEORGES BANK 1988

STATION NO. 249

LAT 41°53.6' N LONG 66°48.9' W DATE 24/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
538	4.73	411	4.67	351	4.72	307	4.55
271	4.54	231	4.40	151	4.42	120	4.19
106	3.45	88	3.29	86	2.77	80	2.51
42	2.19	35	1.84	32	1.48	30	1.25
25	1.02	25	.82	21	.82	16	.58
15	.62	15	.56	14	.39	12	.36
7	.32	6	.24	6	.19	5	.17
5	.12	4	.09	3	.09	2	.07
2	.05	2	.03	2	.05	1	.03

PARAMETER VALUES

PS : 5.65 (4.92, 6.38)

ALPHA : .053 (.050, .055)

BETA : .0022 (.0003, .0041)

SAMPLE TEMP 17.1°C INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.51 CARBON : 212 NITROGEN : 32

NITRATE : .57 SILICATE : .46 PHOSPHATE : .03

GEORGES BANK 1988

STATION NO. 249

LAT 41°53.6' N   LONG 66°48.9' W   DATE 24/08/88   DEPTH 20 M

I	P	I	P	I	P	I	P
379	3.98	287	4.15	267	4.04	247	4.06
199	3.92	120	3.98	88	3.55	77	2.90
66	2.39	56	2.28	46	1.97	41	1.43
30	1.58	26	1.26	25	1.03	20	.78
17	.70	12	.58	9	.37	6	.25
6	.24	5	.20	5	.16	4	.14
3	.09	2	.08	2	.06	2	.06
2	.08	2	.03	2	.04	2	.03
1	.03	1	.03	1	.02		

PARAMETER VALUES

PS : 7.42 (4.92, 9.91)   ALPHA : .055 (.052, .057)   BETA : .0117 (.0019, .0216)

SAMPLE TEMP 17.1°C   INCUBATION TEMP 17.1°C

CHLOROPHYLL : 3.63   CARBON : 214   NITROGEN : 36

NITRATE : .78   SILICATE : .42   PHOSPHATE : .01

GEORGES BANK 1988

STATION NO. 253

LAT 41°53.6' N   LONG 66°48.9' W   DATE 24/08/88   DEPTH 1 M

I	P	I	P	I	P	I	P
458	4.54	319	4.43	231	4.39	195	4.26
148	4.12	132	3.08	120	3.43	110	2.46
100	2.88	38	1.59	30	1.49	28	1.35
26	1.21	25	.97	24	1.14	20	.73
18	.59	13	.54	10	.43	10	.33
9	.25	8	.19	7	.16	4	.10
3	.06	3	.03	3	.03	2	.03
2	.02						

PARAMETER VALUES

PS : 5.74   ALPHA : .044   BETA : .0026
(4.20, 7.28)   (.041, .048)   (-.0014, .0066)

SAMPLE TEMP 16.0°C   INCUBATION TEMP 16.0°C

CHLOROPHYLL : 3.16   CARBON : 294   NITROGEN : 50

NITRATE : 1.81   SILICATE : .42   PHOSPHATE : .80

GEORGES BANK 1988

STATION NO. 253

LAT 41°53.6' N LONG 66°48.9' W DATE 24/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
538	4.80	411	4.36	351	4.47	307	4.35
271	4.13	231	3.87	151	3.66	120	3.36
88	2.75	86	2.18	80	2.10	42	1.47
35	1.47	32	1.10	30	.88	25	.70
16	.56	15	.34	15	.43	14	.36
12	.25	7	.15	6	.06	6	.13
5	.10	5	.06	4	.06	3	.05
2	.03	2	.02	2	.01	2	.04
1	.03						

PARAMETER VALUES

PS : 4.70 (4.09, 5.32)

ALPHA : .040 (.038, .042)

BETA : .0000 (-.0013, .0013)

SAMPLE TEMP 16.0°C INCUBATION TEMP 16.0°C

CHLOROPHYLL : 3.16 CARBON : 252 NITROGEN : 35

NITRATE : 2.10 SILICATE : .47 PHOSPHATE : .83

GEORGES BANK 1988

STATION NO. 253

LAT 41°53.6' N   LONG 66°48.9' W   DATE 24/08/88   DEPTH 20 M

I	P	I	P	I	P	I	P
578	3.45	287	3.69	267	3.33	247	3.32
199	3.24	120	3.08	77	2.22	66	2.25
56	1.77	46	1.79	41	1.42	30	1.58
26	1.27	25	.98	20	.84	17	.54
12	.51	9	.24	6	.13	6	.22
5	.14	5	.12	4	.15	3	.06
2	.06	2	.05	2	.07	2	.02
2	.04	2	.04	2	.05		

PARAMETER VALUES

PS : 3.64   ALPHA : .049   BETA : .0003
(3.41, 3.87)   (.047, .052)   (-.0003, .0010)

SAMPLE TEMP 15.8°C   INCUBATION TEMP 15.8°C

CHLOROPHYLL : 2.98   CARBON : 262   NITROGEN : 40

NITRATE : 1.71   SILICATE : .33   PHOSPHATE : .76

GEORGES BANK 1988

STATION NO. 263

LAT 41°53.6' N   LONG 66°48.9' W   DATE 25/08/88   DEPTH 1 M

I	P	I	P	I	P	I	P
458	3.06	351	3.77	319	3.85	287	3.78
195	3.82	148	3.61	132	3.55	120	3.21
110	2.81	100	2.62	38	1.76	30	1.40
28	1.14	26	1.15	25	.87	24	.85
24	.85	23	.66	22	.82	20	.70
18	.62	18	.56	13	.60	10	.44
10	.44	9	.33	8	.28	7	.24
4	.13	3	.08	3	.09		

PARAMETER VALUES

PS : 385.30 (******,******)   ALPHA : .043 (.041, .045)   BETA : 1.5249 (*******,*******)

SAMPLE TEMP 15.7°C   INCUBATION TEMP 15.7°C

CHLOROPHYLL : 4.21   CARBON : 242   NITROGEN : 40

NITRATE : 1.50   SILICATE : .31   PHOSPHATE : .17

GEORGES BANK 1988

STATION NO. 263

LAT 41°53.6' N LONG 66°48.9' W DATE 25/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
538	2.70	411	2.88	351	3.05	307	2.94
271	2.78	151	3.09	120	3.05	106	2.76
88	2.37	86	2.01	80	1.72	42	1.56
35	1.22	32	1.10	30	.65	25	.53
25	.67	21	.71	16	.54	15	.38
15	.45	7	.25	6	.19	6	.14
5	.14	5	.10	4	.07	3	.03
2	.03	2	.03	2	.03	2	.01
1	.02						

PARAMETER VALUES

PS : 4.83 (3.66, 6.00)   ALPHA : .039 (.036, .041)   BETA : .0056 (.0017, .0094)

SAMPLE TEMP 15.7°C   INCUBATION TEMP 15.7°C

CHLOROPHYLL : 5.09   CARBON : 246   NITROGEN : 40

NITRATE : 1.30   SILICATE : .35   PHOSPHATE : .21

GEORGES BANK 1988

STATION NO. 263

LAT 41°53.6' N LONG 66°48.9' W DATE 25/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	2.79	379	2.84	287	3.07	267	2.92
247	2.84	199	2.69	120	2.93	77	2.56
66	2.30	56	1.70	46	1.31	41	1.50
30	1.21	26	.97	25	.91	20	.70
17	.59	12	.54	9	.40	6	.32
6	.27	5	.22	5	.18	4	.16
3	.09	2	.09	2	.09	2	.07
2	.08	2	.04	2	.06	2	.05

PARAMETER VALUES

PS : 3.33 (3.09, 3.56)

ALPHA : .049 (.047, .052)

BETA : .0012 (.0005, .0019)

SAMPLE TEMP 15.2°C

INCUBATION TEMP 15.2°C

CHLOROPHYLL : 4.27

CARBON : 234

NITROGEN : 40

NITRATE : 1.83

SILICATE : .32

PHOSPHATE : .46

GEORGES BANK 1988

STATION NO. 268

LAT 41°53.6' N   LONG 66°48.9' W   DATE 25/08/88   DEPTH 5 M

I	P	I	P	I	P	I	P
458	4.36	351	4.19	319	3.89	287	3.75
231	4.11	215	4.04	195	3.78	148	4.00
132	3.67	120	2.88	110	3.04	100	2.79
38	1.89	30	1.32	28	1.50	26	1.17
24	1.08	24	.87	23	.64	22	.62
20	.74	18	.66	18	.55	13	.56
10	.47	10	.38	9	.28	8	.16
7	.19	4	.13	3	.08	3	.07
3	.07	2	.04	2	.03		

PARAMETER VALUES

PS : 4.60 (3.92, 5.27)   ALPHA : .048 (.045, .051)   BETA : .0009 (-.0009, .0028)

SAMPLE TEMP 15.8°C   INCUBATION TEMP 15.8°C

CHLOROPHYLL : 2.23   CARBON : 239   NITROGEN : 40

NITRATE : 2.27   SILICATE : .40   PHOSPHATE : 1.45

GEORGES BANK 1988

STATION NO. 268

LAT 41°53.6' N LONG 66°48.9' W DATE 25/08/88 DEPTH 15 M

I	P	I	P	I	P	I	P
538	4.68	411	4.61	351	4.35	307	4.71
271	4.42	151	3.76	120	3.58	106	3.45
86	2.73	80	2.48	35	1.84	32	1.62
30	1.19	25	.75	25	.80	21	.98
16	.69	15	.43	15	.59	14	.36
12	.30	7	.29	6	.21	6	.19
5	.13	5	.10	4	.08	3	.05
2	.03	2	.03	2	.03	2	.02
1	.02						

PARAMETER VALUES

PS : 5.25 (4.60, 5.90) ALPHA : .048 (.045, .050) BETA : .0013 (-.0003, .0029)

SAMPLE TEMP 15.6°C INCUBATION TEMP 15.6°C

CHLOROPHYLL : 2.07 CARBON : 222 NITROGEN : 36

NITRATE : 2.52 SILICATE : .47 PHOSPHATE : 1.57

GEORGES BANK 1988

STATION NO. 268

LAT $41^{o}53.6'$ N   LONG $66^{o}48.9'$ W   DATE 25/08/88   DEPTH 25 M

I	P	I	P	I	P	I	P
578	2.35	379	2.22	287	2.51	199	3.13
120	2.77	88	2.77	77	2.87	66	2.34
56	2.30	41	1.93	30	1.76	26	1.45
25	1.19	20	1.02	17	.86	12	.61
9	.36	6	.38	6	.28	5	.20
5	.14	4	.19	3	.13	2	.13
2	.09	2	.05	2	.07	2	.03
2	.06	2	.06				

PARAMETER VALUES

PS : 3.62 (3.36, 3.89)   ALPHA : .069 (.065, .072)   BETA : .0035 (.0025, .0045)

SAMPLE TEMP 15.3°C   INCUBATION TEMP 15.3°C

CHLOROPHYLL : 6.67   CARBON : 178   NITROGEN : 28

NITRATE : 2.54   SILICATE : .53   PHOSPHATE : 1.92

GEORGES BANK 1988

STATION NO. 282

LAT 41°53.6' N LONG 66°48.9' W DATE 26/08/88 DEPTH 5 M

I	P	I	P	I	P	I	P
458	3.65	351	3.96	319	3.95	287	4.22
231	4.10	215	3.75	148	3.97	132	3.53
120	3.23	100	2.51	38	1.60	30	1.30
28	.94	26	1.05	25	.87	24	.99
24	.77	23	.65	22	.64	20	.65
18	.54	8	.47	13	.52	10	.37
10	.33	9	.25	8	.20	7	.18
4	.11	3	.04	3	.07	3	.05
2	.04	2	.02				

PARAMETER VALUES

PS : 422.10 (******,******)

ALPHA : .041 (.039, .043)

BETA : 1.5027 (*******,*******)

SAMPLE TEMP 15.0°C INCUBATION TEMP 15.0°C

CHLOROPHYLL : 3.39 CARBON : 266 NITROGEN : 48

NITRATE : 2.02 SILICATE : .36 PHOSPHATE : .18

GEORGES BANK 1988

STATION NO. 282

LAT 41°53.6' N LONG 66°48.9' W DATE 26/08/88 DEPTH 15 M

I	P	I	P	I	P	I	P
538	3.38	411	3.37	351	3.78	307	3.77
271	3.49	231	3.52	151	3.36	120	3.29
106	3.07	88	2.75	86	2.47	80	2.03
42	1.56	35	1.56	32	1.10	30	.83
25	.82	25	.65	21	.82	16	.63
15	.45	15	.29	14	.33	12	.27
7	.26	6	.20	6	.18	5	.14
5	.08	4	.10	3	.05	2	.04
2	.03	2	.04	1	.01		

PARAMETER VALUES

PS : 5.61 (4.52, 6.69) ALPHA : .042 (.040, .044) BETA : .0055 (.0022, .0089)

SAMPLE TEMP 14.7°C INCUBATION TEMP 14.7°C

CHLOROPHYLL : 3.39 CARBON : 222 NITROGEN : 35

NITRATE : 2.57 SILICATE : .46 PHOSPHATE : .92

GEORGES BANK 1988

STATION NO. 282

LAT 41°53.6' N   LONG 66°48.9' W   DATE 26/08/88   DEPTH 25 M

I	P	I	P	I	P	I	P
578	2.92	379	3.30	287	3.28	247	3.74
120	3.39	88	3.30	77	3.04	66	2.55
56	2.02	41	1.73	30	1.52	26	1.24
25	1.07	20	.91	17	.74	12	.62
9	.50	6	.35	6	.29	5	.24
5	.18	4	.17	3	.14	2	.11
2	.07	2	.06	2	.10	2	.05
2	.05	2	.04				

PARAMETER VALUES

PS : 4.90 (4.48, 5.32)   ALPHA : .059 (.057, .062)   BETA : .0048 (.0033, .0062)

SAMPLE TEMP 14.0°C   INCUBATION TEMP 14.0°C

CHLOROPHYLL : 3.04   CARBON : 273   NITROGEN : -99

NITRATE : 2.42   SILICATE : .45   PHOSPHATE : 1.51

GEORGES BANK 1988

STATION NO. 289

LAT 42°20.8' N   LONG 66°43.7' W   DATE 26/08/88   DEPTH 5 M

I	P	I	P	I	P	I	P
458	3.77	351	3.71	319	3.64	287	3.82
231	3.63	215	3.30	195	3.42	148	3.24
132	3.02	120	2.46	110	2.40	100	2.01
38	1.23	30	.88	28	.83	26	.67
25	.55	24	.62	24	.49	23	.40
22	.50	20	.34	18	.43	18	.27
13	.23	10	.21	10	.14	9	.10
8	.11	7	.13	4	.08	3	.05
3	.05						

PARAMETER VALUES

PS : 382.20 (******,******)   ALPHA : .030 (.028, .031)   BETA : 1.0741 (*******,*******)

SAMPLE TEMP 17.0°C   INCUBATION TEMP 17.0°C

CHLOROPHYLL : .60   CARBON : 184   NITROGEN : 26

NITRATE : 1.79   SILICATE : .16   PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 289

LAT 42°20.8' N   LONG 66°43.7' W   DATE 26/08/88   DEPTH 15 M

I	P	I	P	I	P	I	P
538	2.62	411	2.90	351	2.80	307	2.61
271	2.46	231	2.57	151	2.44	120	2.15
106	2.22	88	1.97	86	1.56	80	1.36
42	1.25	35	.92	32	.72	30	.54
25	.35	21	.41	16	.28	15	.19
12	.11	7	.13	6	.08	6	.05
5	.04	4	.06				

PARAMETER VALUES

PS : 3.59 (2.69, 4.49)   ALPHA : .028 (.026, .030)   BETA : .0020 (-.0004, .0044)

SAMPLE TEMP 14.0°C   INCUBATION TEMP 14.0°C

CHLOROPHYLL : .78   CARBON : 195   NITROGEN : 24

NITRATE : 1.55   SILICATE : .16   PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 289

LAT 42°20.8' N LONG 66°43.7' W DATE 26/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
578	1.12	379	1.39	287	1.96	267	2.29
247	2.36	199	2.28	120	2.22	88	2.12
77	1.97	66	1.90	56	1.70	46	1.17
41	1.27	30	1.08	26	.95	25	.79
20	.50	17	.50	12	.57	9	.41
6	.27	6	.18	5	.14	5	.13
4	.13	3	.05	2	.05	2	.05
2	.03	2	.06	2	.03	2	.03
2	.03						

PARAMETER VALUES

PS : 5.56 (4.22, 6.90) ALPHA : .041 (.040, .043) BETA : .0168 (.0097, .0238)

SAMPLE TEMP 12.0°C INCUBATION TEMP 12.0°C

CHLOROPHYLL : 1.91 CARBON : 220 NITROGEN : 34

NITRATE : 1.78 SILICATE : .20 PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 313

LAT 42°20.0' N LONG 66°47.7' W DATE 27/08/88 DEPTH 5 M

I	P	I	P	I	P	I	P
458	4.54	351	4.23	319	4.11	287	3.91
231	3.94	195	4.14	148	3.45	132	3.46
120	3.00	110	2.51	100	2.21	38	1.41
30	1.11	28	.63	26	.84	25	.71
24	.82	24	.63	23	.49	22	.69
18	.38	18	.33	13	.32	10	.21
10	.19	9	.13	8	.11	7	.09
4	.08	3	.04	2	.05	2	.05

PARAMETER VALUES

PS : 8.19 (1.78, 14.61)

ALPHA : .034 (.032, .037)

BETA : .0086 (-.0077, .0250)

SAMPLE TEMP 16.5°C

INCUBATION TEMP 16.5°C

CHLOROPHYLL : .66

CARBON : 170

NITROGEN : 20

NITRATE : 1.95

SILICATE : .18

PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 313

LAT 42°20.0' N LONG 66°47.7' W DATE 27/08/88 DEPTH 15 M

I	P	I	P	I	P	I	P
538	3.38	411	3.26	351	3.29	307	3.04
271	3.12	231	3.00	151	2.68	120	2.64
106	2.69	88	2.44	86	2.03	80	1.74
42	1.69	35	1.42	32	1.08	30	.94
25	.77	21	.86	16	.60	15	.51
14	.27	12	.22	7	.27	6	.14
6	.10	5	.05	5	.14	4	.04
3	.05	2	.03	2	.05		

PARAMETER VALUES

PS : 3.26 (2.95, 3.58)

ALPHA : .042 (.039, .044)

BETA : .0000 (-.0008, .0008)

SAMPLE TEMP 14.0°C INCUBATION TEMP 14.0°C

CHLOROPHYLL : .71 CARBON : 164 NITROGEN : 16

NITRATE : 2.14 SILICATE : .25 PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 313

LAT 42°20.0' N LONG 66°47.7' W DATE 27/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
578	1.36	379	1.52	287	2.10	267	2.36
247	2.48	199	2.51	120	2.37	88	2.38
77	2.32	66	2.11	56	1.95	46	1.49
41	1.59	30	1.45	26	1.31	25	1.06
20	.84	17	.68	12	.68	9	.53
6	.39	6	.29	5	.29	5	.22
4	.20	3	.13	2	.16	2	.11
2	.07	2	.14	2	.05	2	.12
2	.06	1	.05	1	.04	1	.04

PARAMETER VALUES

PS : 3.93 (3.61, 4.26)

ALPHA : .056 (.054, .058)

BETA : .0080 (.0063, .0096)

SAMPLE TEMP 11.5°C

INCUBATION TEMP 11.5°C

CHLOROPHYLL : 1.05

CARBON : 191

NITROGEN : 29

NITRATE : 2.76

SILICATE : .40

PHOSPHATE : .92

GEORGES BANK 1988

STATION NO. 323

LAT 42°21.8' N LONG 66°46.2' W DATE 27/08/88 DEPTH 1 M

I	P	I	P	I	P	I	P
458	5.78	351	6.64	319	6.79	287	6.48
231	5.95	215	5.80	195	5.22	148	5.66
132	5.23	120	4.33	110	3.80	100	3.49
38	2.08	28	1.31	26	1.31	25	1.03
24	.93	24	.85	23	.62	22	.88
20	.73	18	.68	18	.35	13	.52
10	.33	10	.29	9	.22	8	.18
7	.19	4	.15	3	.05	2	.08
2	.04						

PARAMETER VALUES

PS : 679.30 (******,******)

ALPHA : .051 (.048, .054)

BETA : 1.9420 (*******,*******)

SAMPLE TEMP 16.6°C INCUBATION TEMP 16.6°C

CHLOROPHYLL : .51 CARBON : 176 NITROGEN : 24

NITRATE : 1.91 SILICATE : .23 PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 323

LAT 42°21.8' N LONG 66°46.2' W DATE 27/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
419	4.93	327	5.10	291	5.45	259	4.98
207	5.14	191	5.20	100	4.73	90	4.30
76	4.10	56	3.65	52	2.89	31	2.65
23	2.17	19	1.73	17	1.20	16	1.36
14	1.08	12	.86	11	.80	9	.59
7	.44	7	.35	6	.29	6	.25
4	.18	4	.15	3	.19	3	.07
2	.09	2	.06	1	.02		

PARAMETER VALUES

PS : 6.07 (5.56, 6.58) ALPHA : .094 (.090, .098) BETA : .0030 (.0012, .0049)

SAMPLE TEMP 16.4°C INCUBATION TEMP 16.4°C

CHLOROPHYLL : .68 CARBON : 168 NITROGEN : 20

NITRATE : 1.94 SILICATE : .23 PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 323

LAT $42^{o}21.8'$ N LONG $66^{o}46.2'$ W DATE 27/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	2.20	379	3.83	287	4.23	267	4.43
247	4.88	199	4.87	120	4.97	88	5.00
77	4.64	66	4.82	56	4.24	46	3.50
41	3.15	30	2.82	26	2.99	25	2.43
20	1.34	17	1.73	12	.94	9	.96
6	.79	6	.56	5	.38	4	.37
3	.31	2	.21	2	.17	2	.16
2	.23	2	.10	2	.14	2	.13
1	.11	1	.10	1	.06		

PARAMETER VALUES

PS : 8.36 ALPHA : .119 BETA : .0186
(7.63, 9.08) (.115, .124) (.0148, .0224)

SAMPLE TEMP $13.5^{o}C$ INCUBATION TEMP $13.5^{o}C$

CHLOROPHYLL : .98 CARBON : 186 NITROGEN : 26

NITRATE : 2.33 SILICATE : .25 PHOSPHATE : .00

GEORGES BANK 1988

STATION NO. 347

LAT 42°20.7' N LONG 66°47.4' W DATE 28/08/88 DEPTH 1 M

I	P	I	P	I	P	I	P
458	5.05	319	4.80	287	4.73	231	4.86
215	4.26	195	4.64	148	4.47	132	4.01
120	3.33	110	3.01	100	2.43	38	1.77
30	1.20	28	1.23	26	1.15	25	.92
24	.91	24	.84	23	.71	22	.78
20	.69	18	.54	18	.47	13	.48
10	.39	10	.32	9	.23	8	.27
7	.13	4	.10	3	.06	3	.05
3	.02	2	.02	2	.03		

PARAMETER VALUES

PS : 9.78 (3.18, 16.37)

ALPHA : .042 (.039, .044)

BETA : .0114 (-.0063, .0292)

SAMPLE TEMP 18.0°C

INCUBATION TEMP 18.0°C

CHLOROPHYLL : .65

CARBON : 144

NITROGEN : 16

NITRATE : .12

SILICATE : 1.88

PHOSPHATE : .18

GEORGES BANK 1988

STATION NO. 347

LAT 42°20.7' N   LONG 66°47.4' W   DATE 28/08/88   DEPTH 10 M

I	P	I	P	I	P	I	P
419	3.97	327	3.97	291	4.30	259	4.12
207	3.83	191	3.75	128	3.83	100	3.59
90	3.23	76	2.78	56	2.40	52	2.11
31	1.77	23	1.41	19	1.15	16	.94
14	.82	12	.63	11	.48	9	.38
7	.34	7	.27	6	.24	6	.20
4	.16	4	.13	3	.10	3	.12
2	.05	1	.05	1	.06	1	.03
1	.03	1	.03				

PARAMETER VALUES

PS : 4.59 (4.22, 4.95)   ALPHA : .063 (.061, .066)   BETA : .0016 (.0004, .0028)

SAMPLE TEMP 16.8°C   INCUBATION TEMP 16.8°C

CHLOROPHYLL : .72   CARBON : 166   NITROGEN : 24

NITRATE : .12   SILICATE : 3.39   PHOSPHATE : .28

GEORGES BANK 1988

STATION NO. 347

LAT 42°20.7' N LONG 66°47.4' W DATE 28/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	1.64	379	1.76	287	2.18	267	2.42
247	2.29	120	2.49	88	2.50	77	2.36
66	1.97	46	1.57	41	1.69	30	1.36
20	.91	17	.57	12	.57	9	.34
6	.27	6	.10	5	.15	5	.14
4	.17	3	.11	2	.09	2	.06
2	.06	2	.05	2	.03	2	.06
2	.05	1	.03	1	.03	1	.00

PARAMETER VALUES

PS : 3.62 (3.30, 3.93) ALPHA : .054 (.052, .057) BETA : .0057 (.0043, .0071)

SAMPLE TEMP 12.0°C INCUBATION TEMP 12.0°C

CHLOROPHYLL : .84 CARBON : 160 NITROGEN : 20

NITRATE : .12 SILICATE : 2.35 PHOSPHATE : .22

GEORGES BANK 1988

STATION NO. 353

LAT 42° 9.1' N LONG 66°46.8' W DATE 28/08/88 DEPTH 1 M

I	P	I	P	I	P	I	P
458	4.48	351	4.18	319	3.57	287	3.71
231	4.05	215	3.26	195	3.68	148	3.53
132	3.06	120	3.18	110	2.84	100	2.43
38	1.54	30	1.20	28	1.23	26	.99
25	.80	24	.96	24	.66	23	.52
22	.74	20	.56	18	.52	18	.38
13	.43	10	.27	10	.14	9	.18
8	.13	7	.10	4	.06	3	.04
3	.03						

PARAMETER VALUES

PS : 4.24 (3.44, 5.03)

ALPHA : .040 (.037, .043)

BETA : .0000 (-.0019, .0019)

SAMPLE TEMP 14.2°C INCUBATION TEMP 14.2°C

CHLOROPHYLL : 3.39 CARBON : 229 NITROGEN : 29

NITRATE : 2.11 SILICATE : 4.39 PHOSPHATE : .65

GEORGES BANK 1988

STATION NO. 353

LAT 42° 9.1' N LONG 66°46.8' W DATE 28/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
419	3.47	327	3.34	259	3.26	207	3.40
191	3.08	128	2.86	100	2.82	90	2.73
76	2.31	56	2.14	52	1.85	31	1.85
23	1.38	19	1.00	17	.68	16	.49
14	.52	12	.48	11	.47	9	.34
7	.23	7	.17	6	.21	6	.13
4	.13	4	.08	3	.06	3	.03
2	.03	2	.04	1	.03	1	.02
1	.01	1	.01	1	.01		

PARAMETER VALUES

PS : 3.39 (3.08, 3.69) ALPHA : .056 (.052, .059) BETA : .0000 (-.0010, .0010)

SAMPLE TEMP 13.0°C INCUBATION TEMP 13.0°C

CHLOROPHYLL : 3.74 CARBON : 240 NITROGEN : 40

NITRATE : 1.38 SILICATE : 2.42 PHOSPHATE : .31

GEORGES BANK 1988

STATION NO. 353

LAT 42° 9.1' N LONG 66°46.8' W DATE 28/08/88 DEPTH 20 M

I	P	I	P	I	P	I	P
578	2.06	379	2.06	287	2.49	267	2.79
247	2.31	199	2.68	88	2.50	77	2.32
66	2.10	56	1.90	46	1.32	41	1.55
30	1.29	26	.92	25	.83	20	.70
17	.60	12	.63	9	.43	6	.33
6	.24	5	.21	5	.16	4	.18
3	.13	2	.09	2	.07	2	.06
2	.10	2	.05	2	.07	2	.06
1	.03	1	.04	1	.04		

PARAMETER VALUES

PS : 3.47 (3.18, 3.77)

ALPHA : .050 (.048, .053)

BETA : .0037 (.0025, .0048)

SAMPLE TEMP 12.0°C INCUBATION TEMP 12.0°C

CHLOROPHYLL : 2.63 CARBON : 184 NITROGEN : 28

NITRATE : 3.19 SILICATE : 4.56 PHOSPHATE : .49

GEORGES BANK 1988

STATION NO. 370

LAT 42^{0} 8.0' N   LONG $66^{0}45.9'$ W .   DATE 29/08/88   DEPTH 1 M

I	P	I	P	I	P	I	P
458	3.89	351	3.73	319	3.75	287	3.32
231	3.88	215	3.38	195	3.84	148	3.71
132	3.68	120	2.86	110	2.71	100	2.56
38	1.68	30	1.23	28	1.25	26	1.07
25	.90	24	1.00	24	.72	23	.60
22	.76	20	.59	18	.50	18	.39
13	.41	10	.40	10	.30	9	.23
8	.16	7	.12	4	.12	3	.07
3	.06	3	.04	2	.03	2	.02

PARAMETER VALUES

PS : 5.10 (3.91, 6.29)   ALPHA : .043 (.040, .046)   BETA : .0035 (-.0001, .0071)

SAMPLE TEMP 14.0°C   INCUBATION TEMP 14.0°C

CHLOROPHYLL : 2.34   CARBON : 206   NITROGEN : 28

NITRATE : 2.30   SILICATE : .33   PHOSPHATE : 1.14

GEORGES BANK 1988

STATION NO. 370

LAT 42° 8.0' N LONG 66°45.9' W DATE 29/08/88 DEPTH 10 M

I	P	I	P	I	P	I	P
419	2.66	327	2.77	291	2.53	259	2.42
207	2.82	191	2.76	128	2.72	100	2.81
90	2.57	76	2.31	56	1.99	52	1.88
31	1.72	23	1.27	19	1.10	17	.81
16	.84	14	.73	11	.61	9	.52
7	.39	7	.34	6	.27	6	.27
4	.19	4	.14	3	.11	3	.08
2	.06	2	.06	1	.03	1	.05
1	.02	1	.02	1	.03		

PARAMETER VALUES

PS : 3.06 (2.89, 3.22)

ALPHA : .065 (.063, .068)

BETA : .0013 (.0007, .0020)

SAMPLE TEMP 10.0°C INCUBATION TEMP 10.0°C

CHLOROPHYLL : 2.57 CARBON : 216 NITROGEN : 34

NITRATE : 3.19 SILICATE : .41 PHOSPHATE : 2.00

GEORGES BANK 1988

STATION NO. 370

LAT 42° 8.0' N   LONG 66°45.9' W   DATE 29/08/88   DEPTH 20 M

I	P	I	P	I	P	I	P
578	1.17	379	1.37	287	1.68	267	1.75
247	1.72	199	1.90	120	1.79	77	1.74
66	1.77	56	1.67	46	1.37	41	1.44
30	1.37	26	1.24	25	.86	20	.80
17	.56	12	.47	9	.38	6	.32
6	.18	5	.21	5	.17	4	.18
3	.13	2	.11	2	.07	2	.04
2	.10	2	.06	2	.07	2	.06
1	.05	1	.01	1	.04		

PARAMETER VALUES

PS : 2.44 (2.29, 2.58)   ALPHA : .053 (.051, .056)   BETA : .0033 (.0026, .0039)

SAMPLE TEMP 9.0°C   INCUBATION TEMP 9.0°C

CHLOROPHYLL : 2.09   CARBON : 136   NITROGEN : 23

NITRATE : 4.30   SILICATE : .51   PHOSPHATE : 3.79

GEORGES BANK 1988

STATION NO. 378

LAT 42^{0} 9.3' N   LONG 66^{0}46.4' W   DATE 29/08/88   DEPTH 5 M

I	P	I	P	I	P	I	P
458	3.82	351	3.61	319	3.71	287	3.60
231	3.28	215	3.20	195	3.50	148	3.12
132	3.01	120	2.48	110	2.38	38	1.47
30	1.09	28	1.10	26	1.01	25	.67
24	.73	24	.58	23	.47	22	.57
20	.49	18	.39	13	.31	10	.21
10	.14	9	.10	8	.11	7	.08
4	.04						

PARAMETER VALUES

PS : 4.50   ALPHA : .035   BETA : .0016

(3.42, 5.57)   (.033, .037)   (-.0012, .0043)

SAMPLE TEMP 14.0^{0}C   INCUBATION TEMP 14.0^{0}C

CHLOROPHYLL : 2.93   CARBON : 347   NITROGEN : 52

NITRATE : 3.17   SILICATE : .40   PHOSPHATE : .93

GEORGES BANK 1988

STATION NO. 378

LAT 42^{0} 9.3' N   LONG 66^{0}46.4' W   DATE 29/08/88   DEPTH 15 M

I	P	I	P	I	P	I	P
419	3.40	327	3.39	291	3.50	259	3.37
207	3.22	191	3.06	128	2.76	100	3.05
90	2.79	76	2.40	56	2.24	52	1.87
31	1.69	23	1.30	19	1.04	17	.82
16	.83	14	.64	12	.52	11	.61
9	.44	7	.30	7	.23	6	.20
6	.17	4	.14	4	.10	3	.06
3	.04	2	.03	2	.03	1	.03
1	.01						

PARAMETER VALUES

PS : 3.38 (3.14, 3.61)   ALPHA : .060 (.057, .062)   BETA : .0000 (-.0008, .0008)

SAMPLE TEMP 13.5^{o}C   INCUBATION TEMP 13.5^{o}C

CHLOROPHYLL : 2.81   CARBON : 240   NITROGEN : 32

NITRATE : 3.40   SILICATE : .38   PHOSPHATE : 1.38

GEORGES BANK 1988

STATION NO. 378

LAT 42^{0} 9.3' N LONG 66^{0}46.4' W DATE 29/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
578	1.25	379	1.76	267	2.06	247	2.36
199	2.25	120	2.09	88	2.29	77	2.04
66	1.66	56	1.51	46	1.21	41	1.42
30	1.25	26	1.06	20	.69	17	.51
12	.53	9	.35	6	.30	6	.24
5	.18	5	.14	4	.16	3	.10
2	.09	2	.05	2	.04	2	.07
2	.04	2	.05	2	.05	1	.03
1	.02	1	.02				

PARAMETER VALUES

PS : 3.74 (3.34, 4.14)

ALPHA : .044 (.042, .046)

BETA : .0072 (.0053, .0090)

SAMPLE TEMP $11.5^{0}C$ INCUBATION TEMP $11.5^{0}C$

CHLOROPHYLL : 2.75 CARBON : 240 NITROGEN : 42

NITRATE : 4.26 SILICATE : .51 PHOSPHATE : 2.88

GEORGES BANK 1988

STATION NO. 395

LAT 42^{0} 9.2' N   LONG 66^{0}46.4' W   DATE 30/08/88   DEPTH 5 M

I	P	I	P	I	P	I	P
423	4.34	327	4.23	271	4.20	215	4.07
151	4.04	120	3.59	106	3.52	96	3.06
80	2.71	76	2.39	29	1.41	23	1.19
22	1.07	22	.99	21	.82	19	.85
18	.74	18	.57	17	.58	16	.58
15	.51	13	.41	10	.50	8	.37
8	.33	7	.19	6	.16	6	.16
3	.09	3	.08	2	.06	2	.02
2	.04	2	.03				

PARAMETER VALUES

PS : 6.27 (5.00, 7.55)   ALPHA : .049 (.047, .051)   BETA : .0055 (.0015, .0094)

SAMPLE TEMP 16.0^{0}C   INCUBATION TEMP 16.0^{0}C

CHLOROPHYLL : 2.14   CARBON : 254   NITROGEN : 40

NITRATE : 3.27   SILICATE : .40   PHOSPHATE : .96

GEORGES BANK 1988

STATION NO. 395

LAT 42° 9.2' N   LONG 66°46.4' W   DATE 30/08/88   DEPTH 15 M

I	P	I	P	I	P	I	P
419	2.26	327	2.15	291	2.19	259	2.42
207	2.29	191	2.37	128	2.20	100	2.03
90	1.95	76	1.83	56	1.44	52	1.34
23	1.16	19	.76	17	.73	16	.76
14	.63	12	.50	11	.54	9	.45
7	.34	7	.29	6	.28	6	.20
4	.15	4	.17	3	.13	3	.11
2	.07	2	.06	1	.04	1	.03
1	.03	1	.03	1	.02		

PARAMETER VALUES

PS : 2.39 (2.26, 2.52)   ALPHA : .048 (.046, .051)   BETA : .0004 (-.0001, .0009)

SAMPLE TEMP 11.0°C   INCUBATION TEMP 11.0°C

CHLOROPHYLL : 2.11   CARBON : 214   NITROGEN : 30

NITRATE : 3.49   SILICATE : .41   PHOSPHATE : 2.12

GEORGES BANK 1988

STATION NO. 395

LAT 42° 9.2' N LONG 66°46.4' W DATE 30/08/88 DEPTH 25 M

I	P	I	P	I	P	I	P
439	.63	339	.87	271	1.19	239	1.30
211	1.51	183	1.59	112	1.38	74	1.43
62	1.25	50	1.40	42	1.34	38	1.24
31	1.16	29	1.17	22	1.17	18	.83
14	.71	13	.56	11	.39	7	.27
5	.26	4	.20	3	.18	3	.16
3	.11	2	.13	2	.12	2	.11
2	.08	2	.09	1	.08	1	.08
1	.05	1	.06	.8	.05	.7	.03

PARAMETER VALUES

PS : 2.11 (1.92, 2.30)

ALPHA : .057 (.054, .061)

BETA : .0048 (.0036, .0060)

SAMPLE TEMP 9.0^{o}C

INCUBATION TEMP 9.0^{o}C

CHLOROPHYLL : 1.63

CARBON : 194

NITROGEN : 26

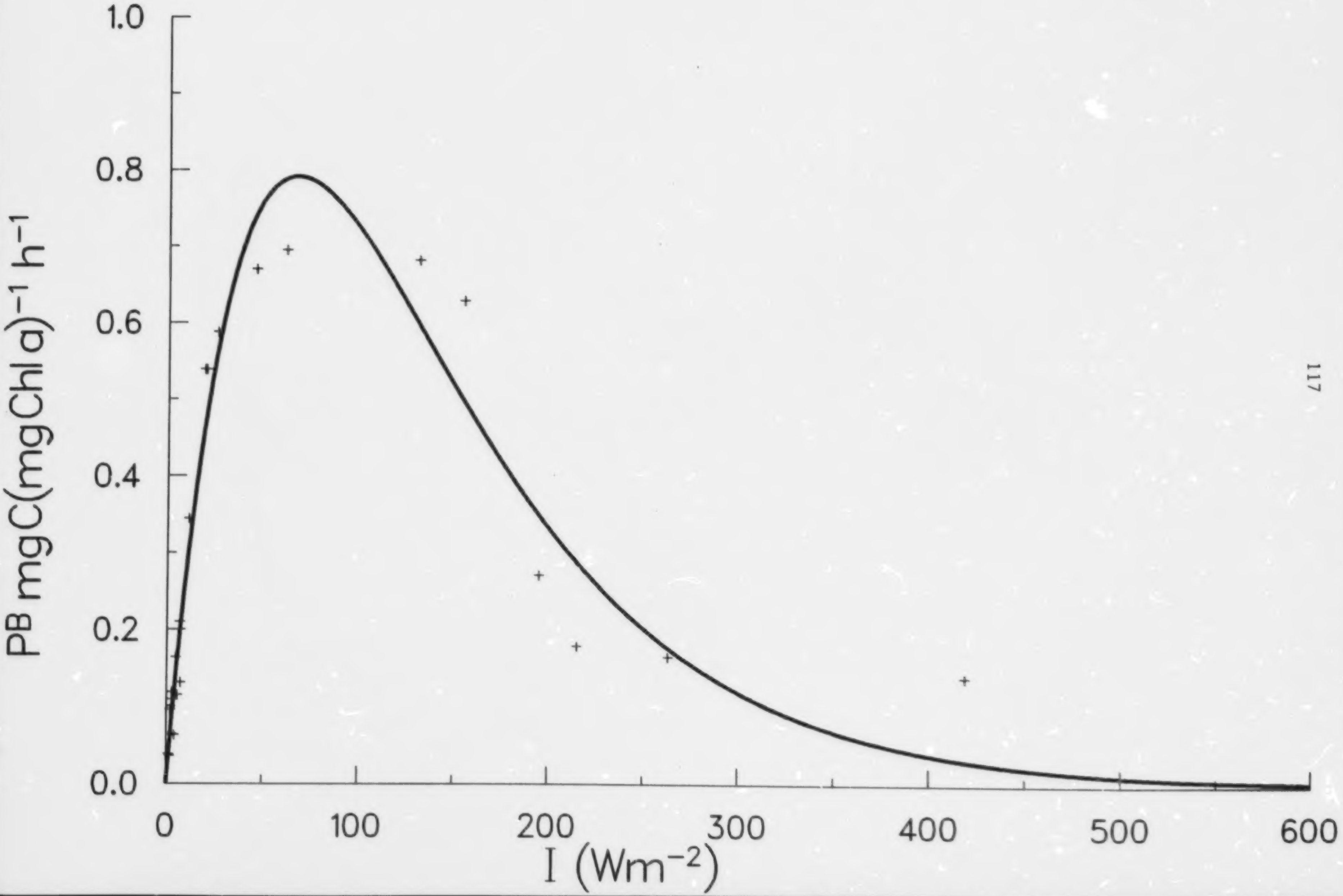
NITRATE : 5.11

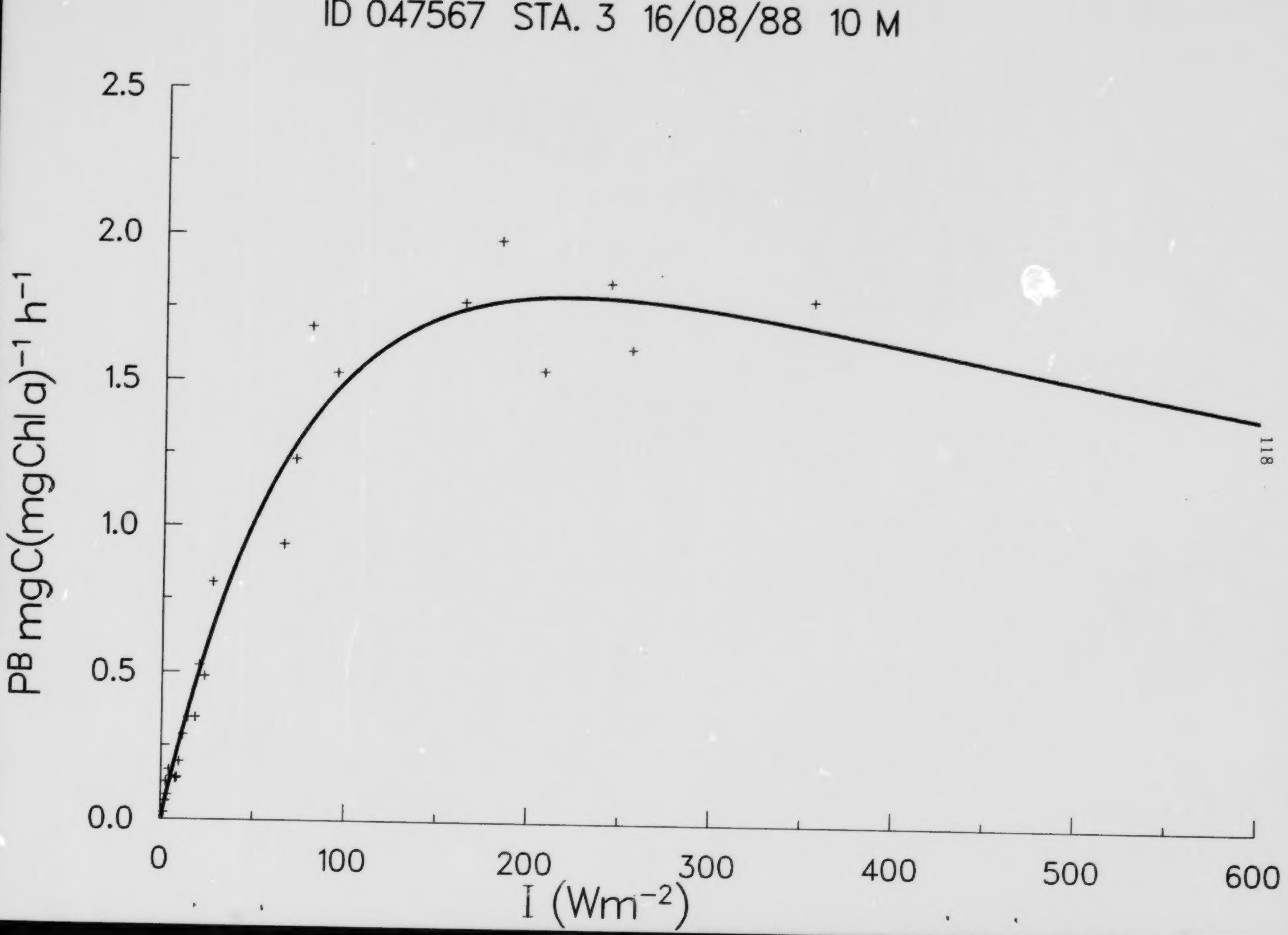
SILICATE : .67

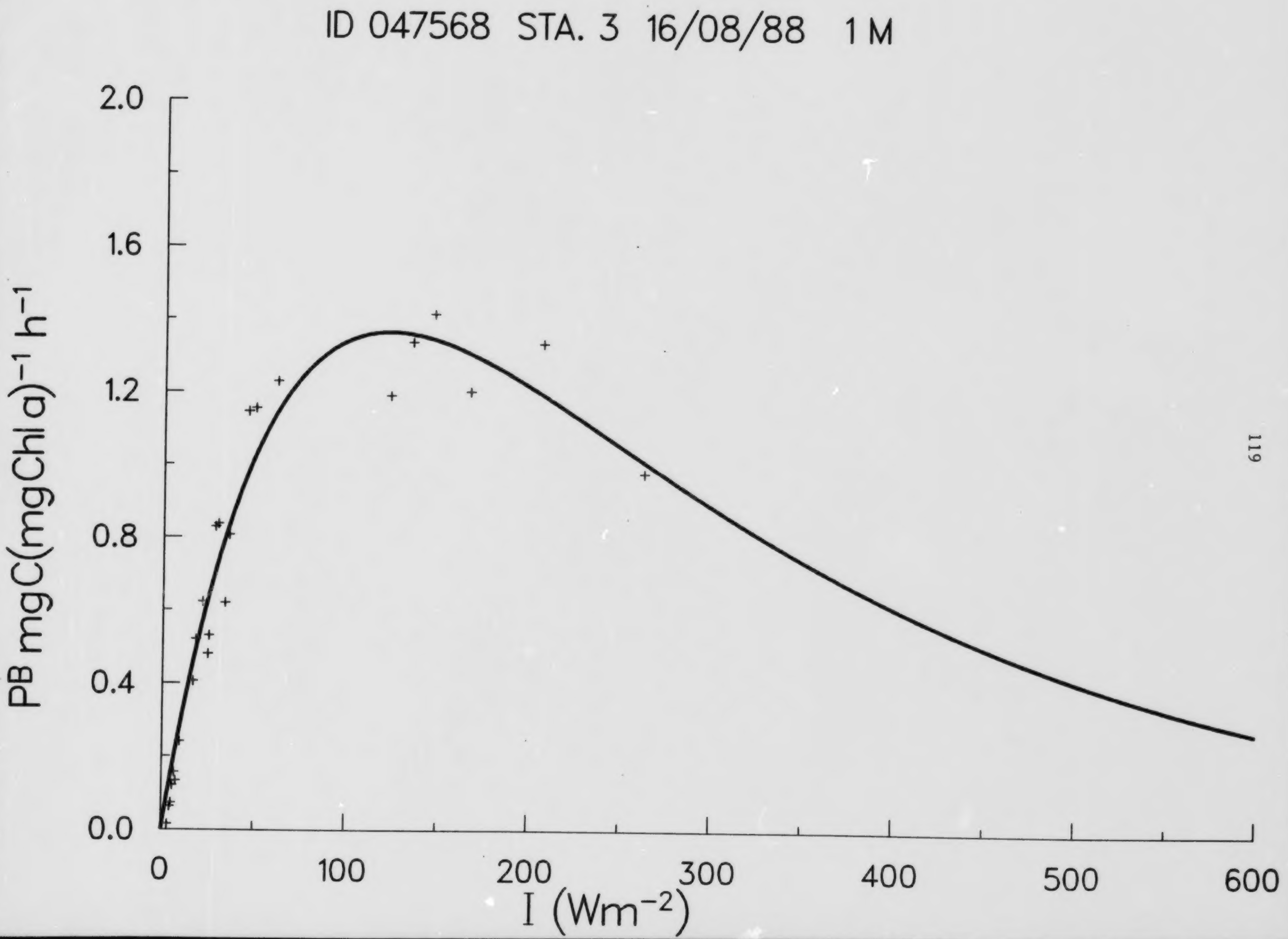
PHOSPHATE : 4.51

SOLID LINE FIT TO PI DATA

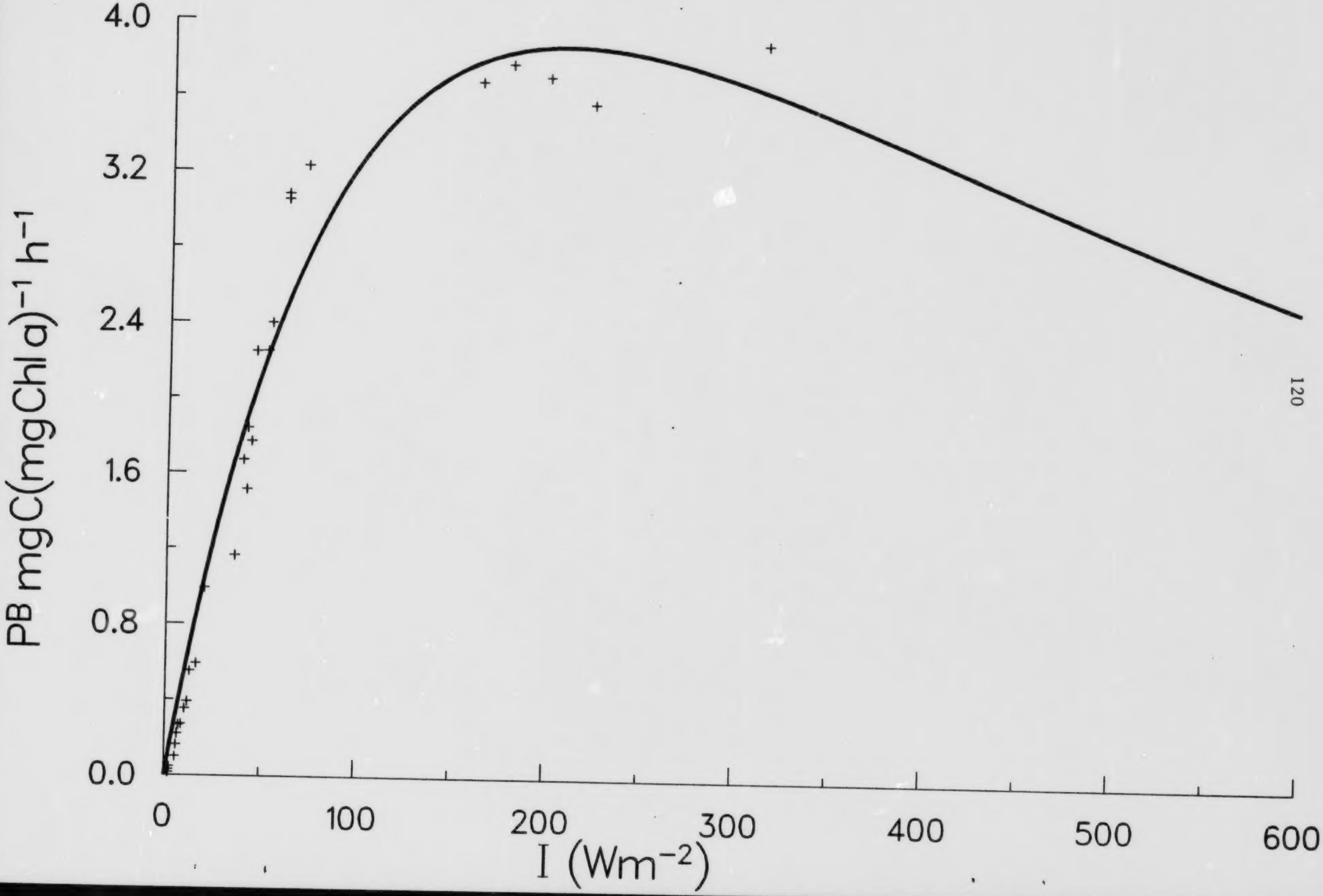
ID 047566 STA. 3 16/08/88 25 M

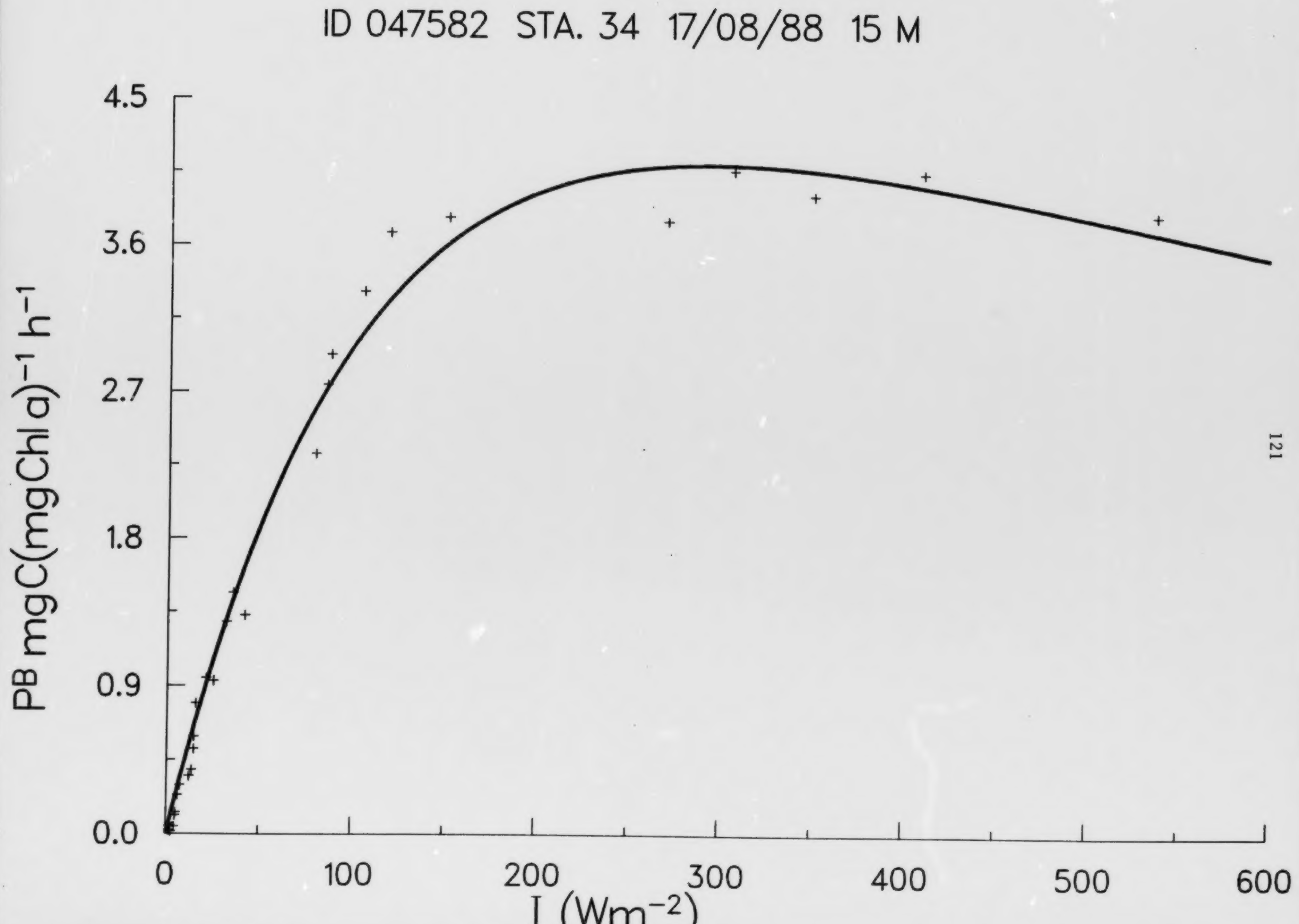


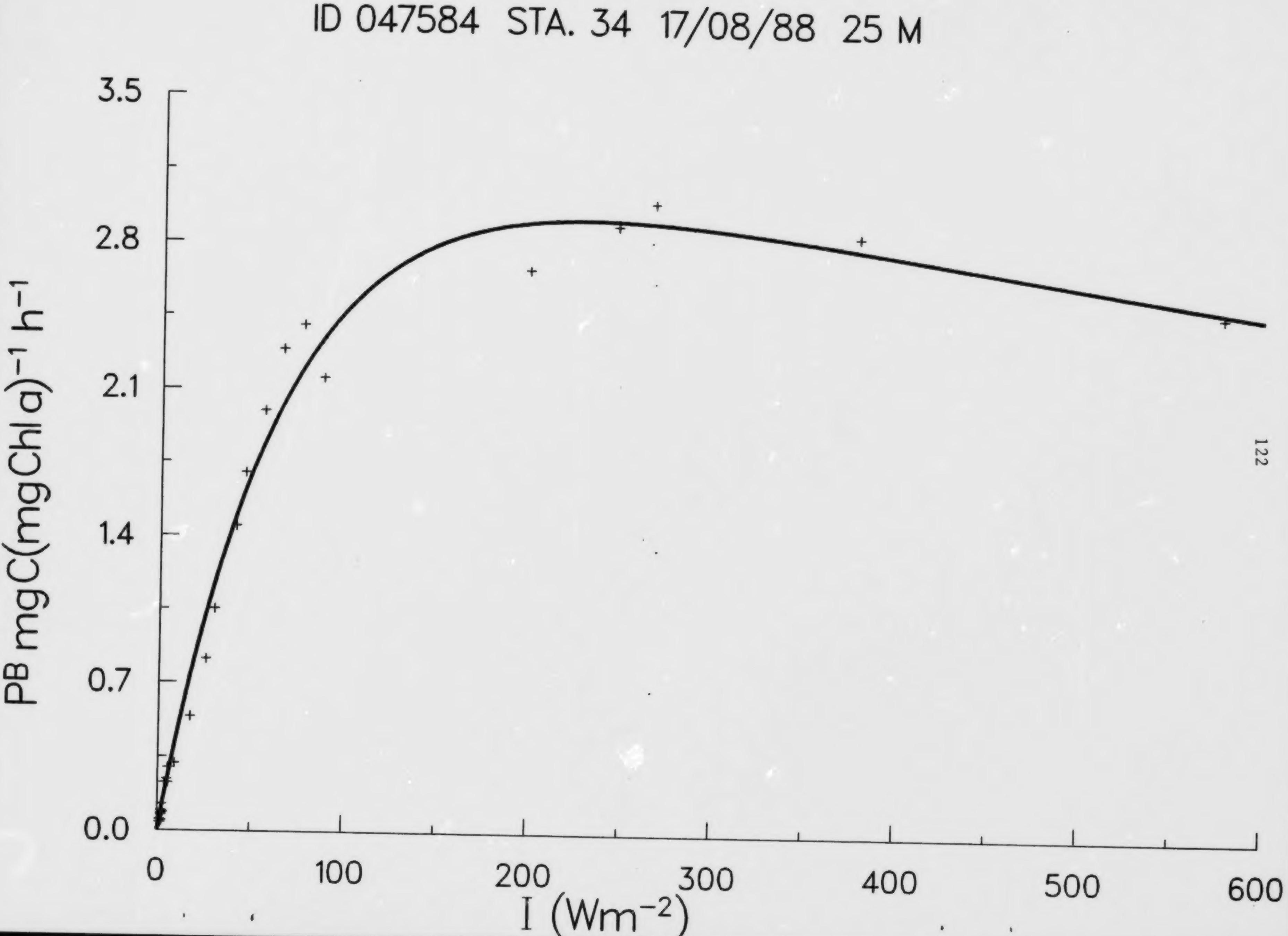

ID 047567 STA. 3 16/08/88 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
0.0
0.5
1.0
1.5
2.0
2.5
0
100
200
300
400
500
600
I (Wm^{-2})

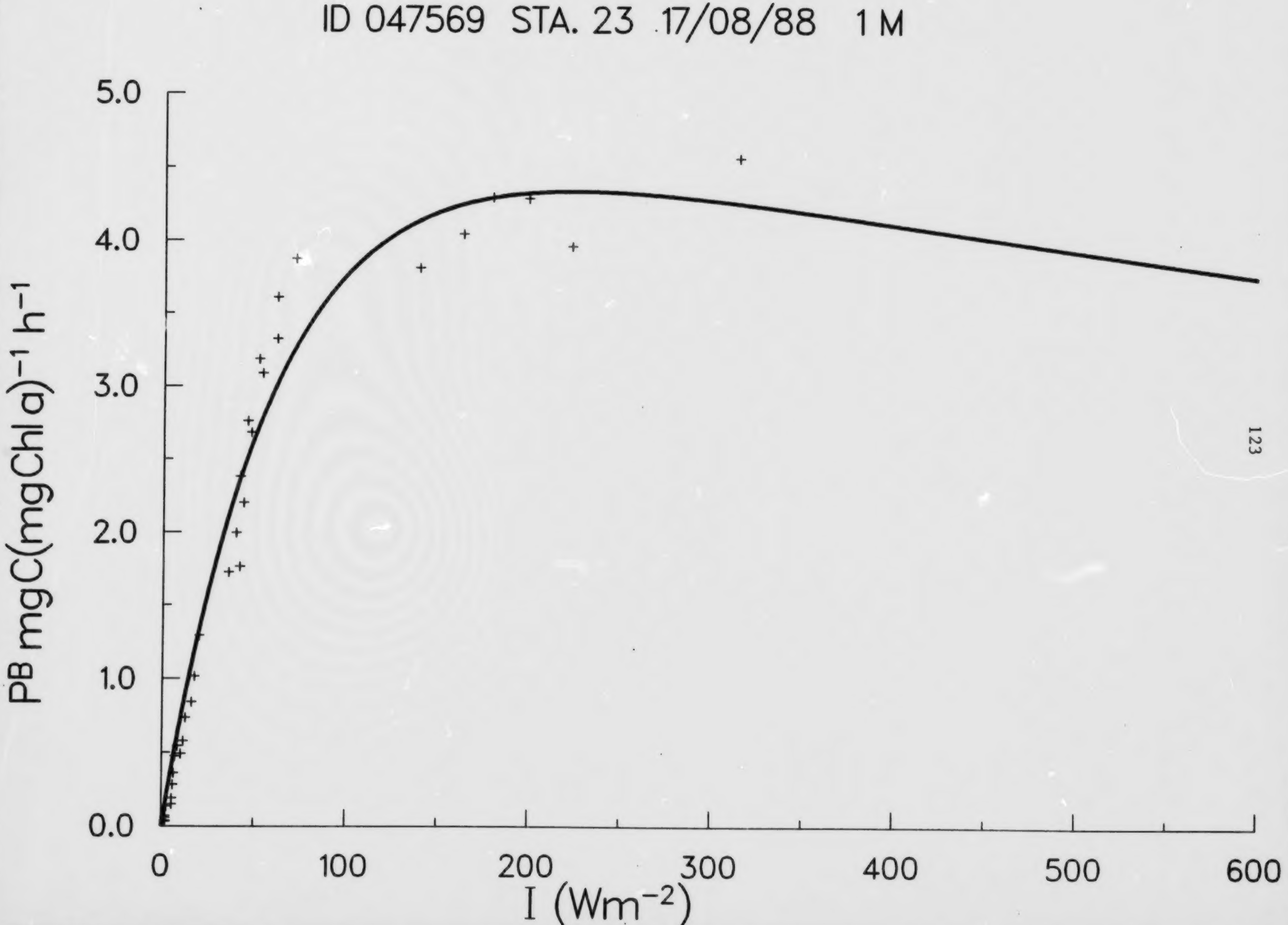

ID 047568 STA. 3 16/08/88 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
0.0
0.4
0.8
1.2
1.6
2.0
0
100
200
300
400
500
600
I (Wm^{-2})

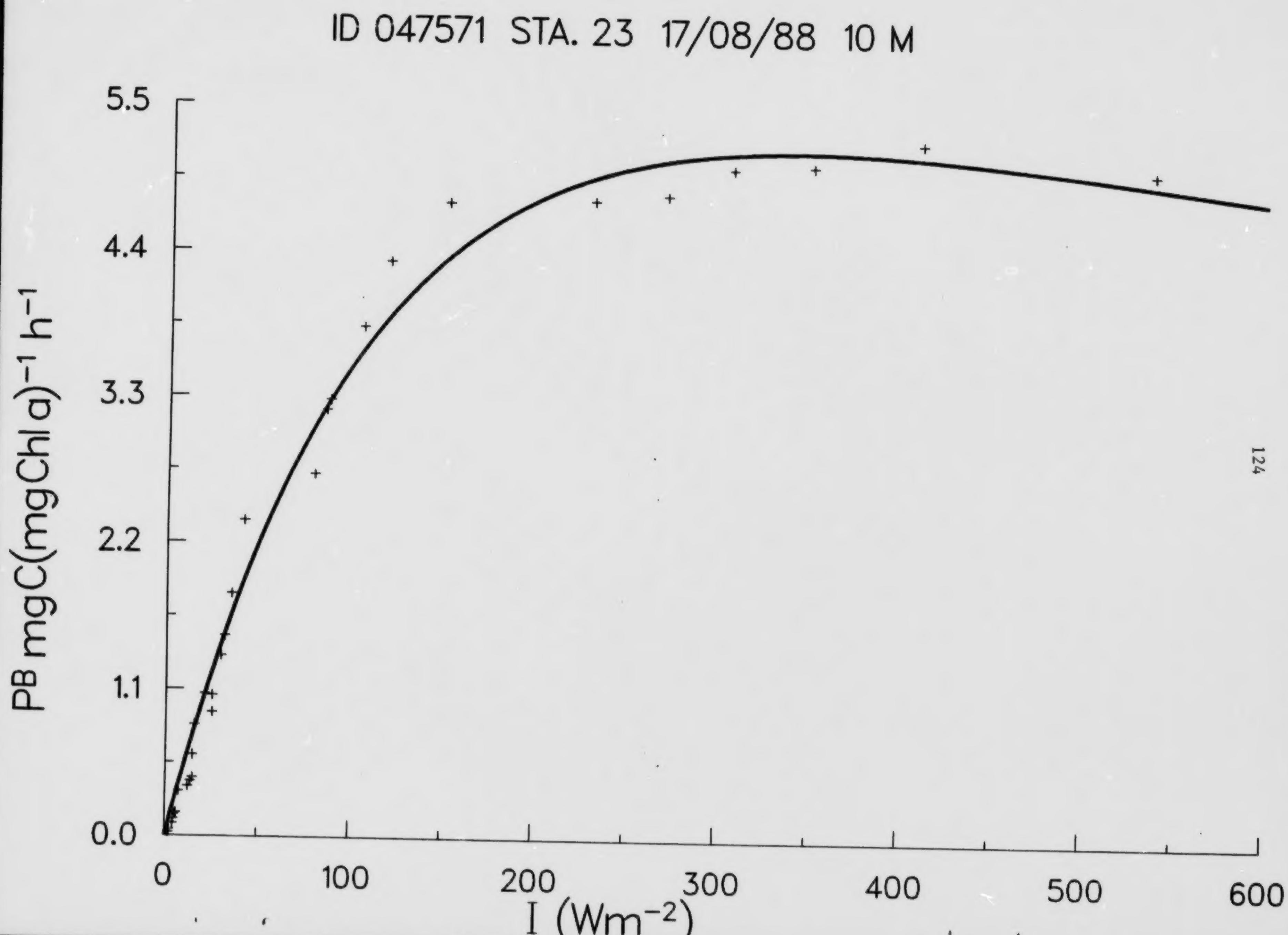
ID 047580 STA. 34 17/08/88 5 M

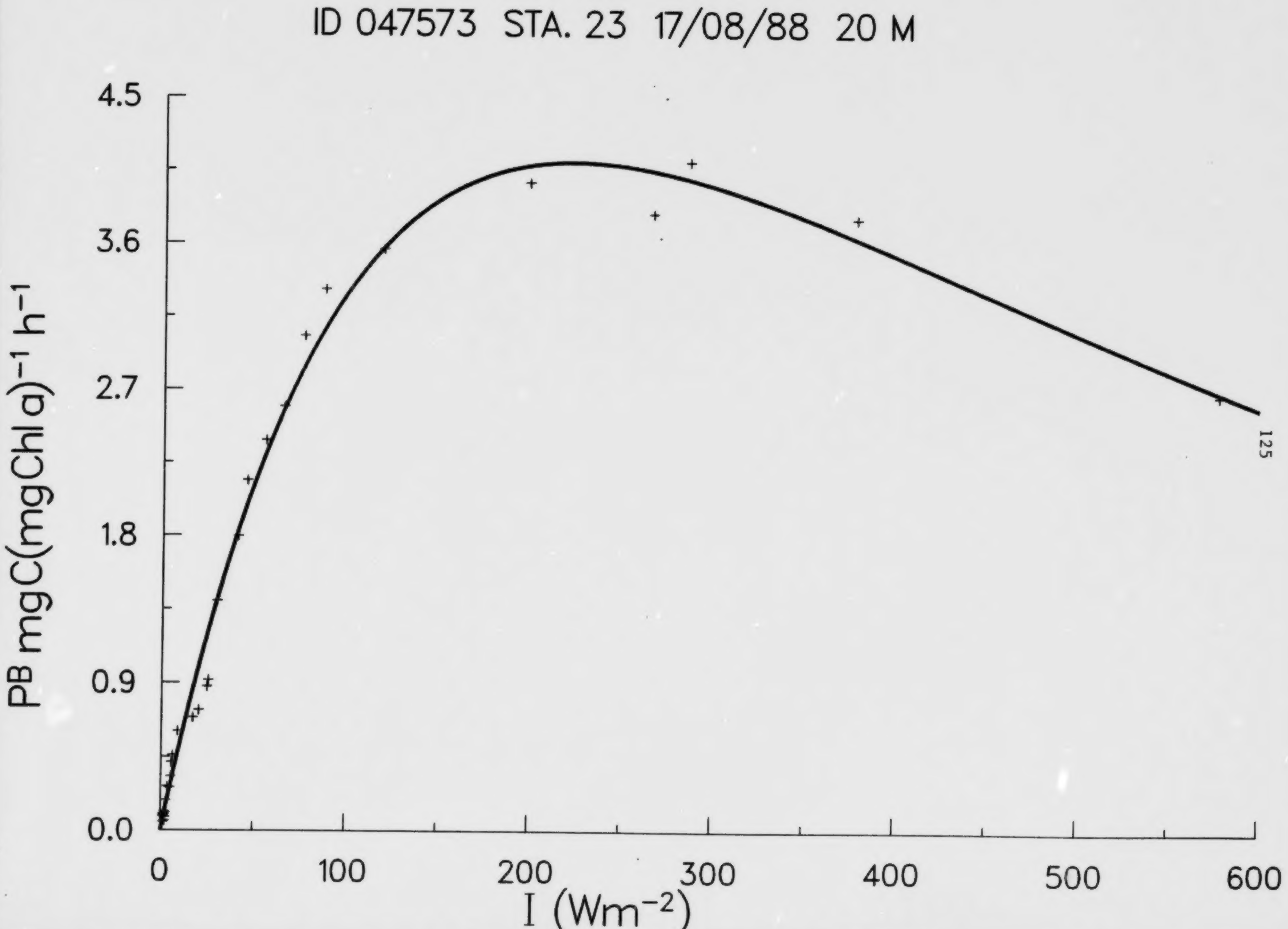


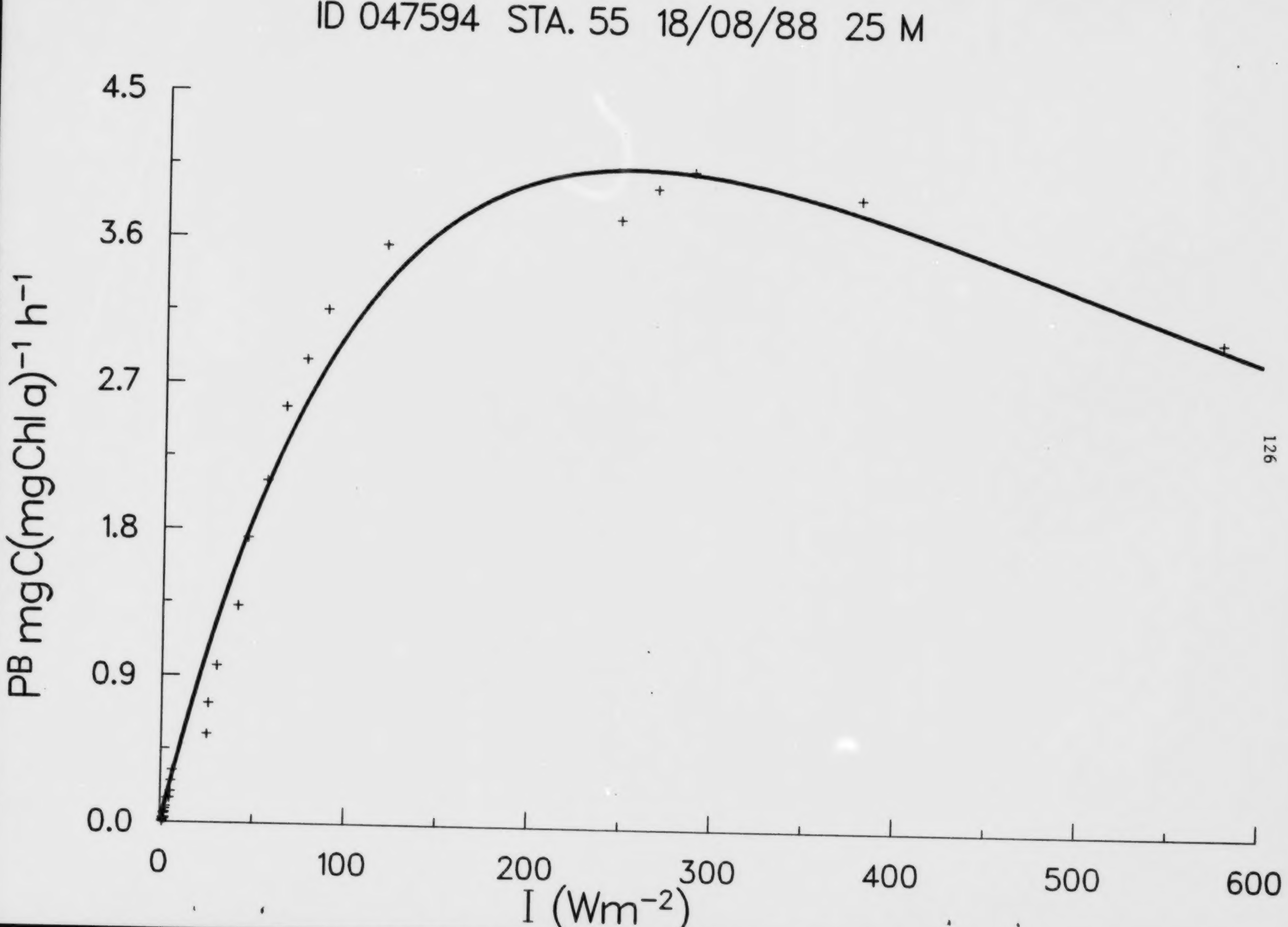

ID 047582 STA. 34 17/08/88 15 M
PB mgC(mgChl a)⁻¹ h⁻¹
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

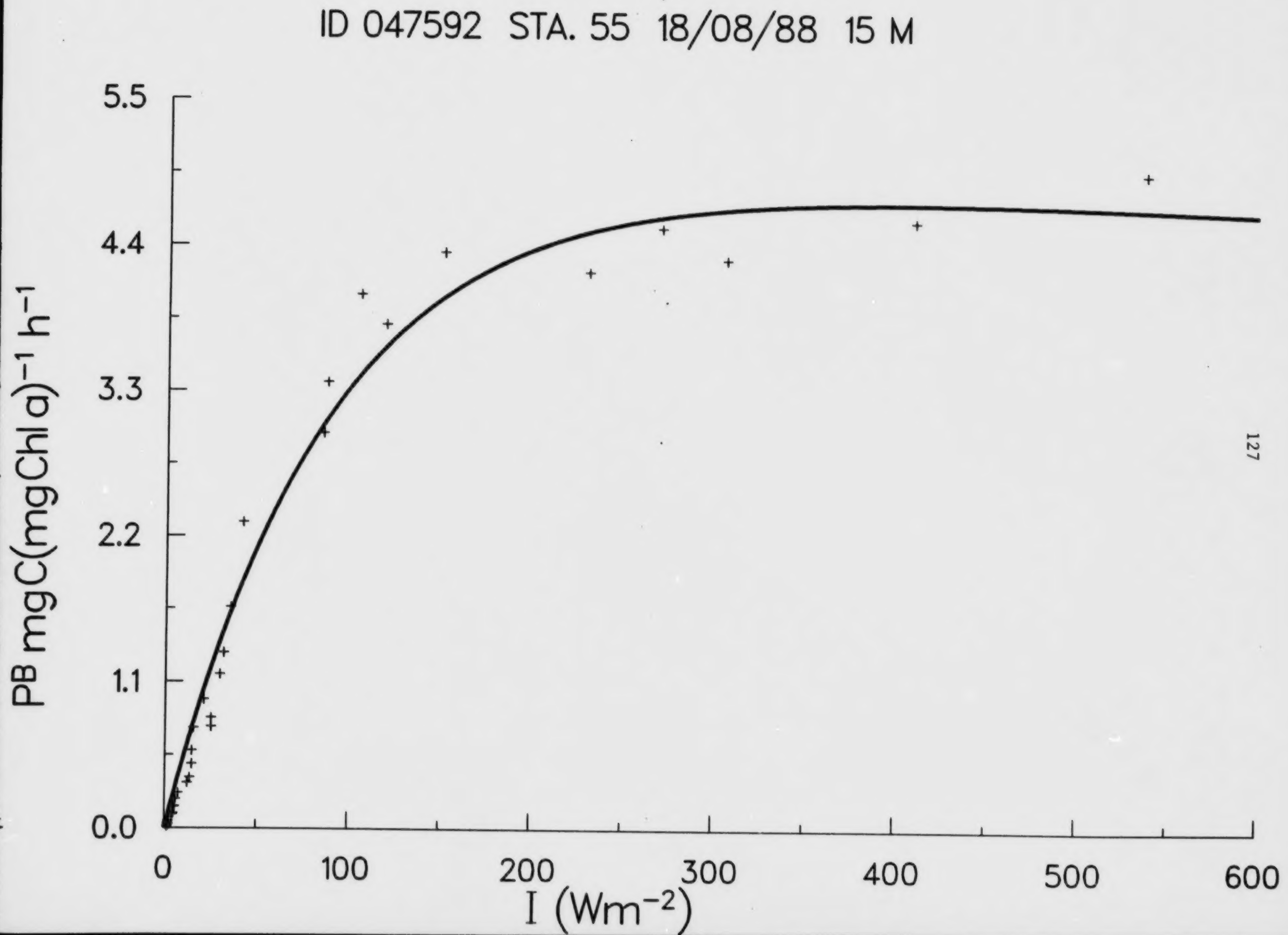

ID 047584 STA. 34 17/08/88 25 M
3.5
2.8
2.1
1.4
0.7
0.0
PB mgC(mgChl a)⁻¹ h⁻¹
0
100
200
300
400
500
600
I (Wm⁻²)

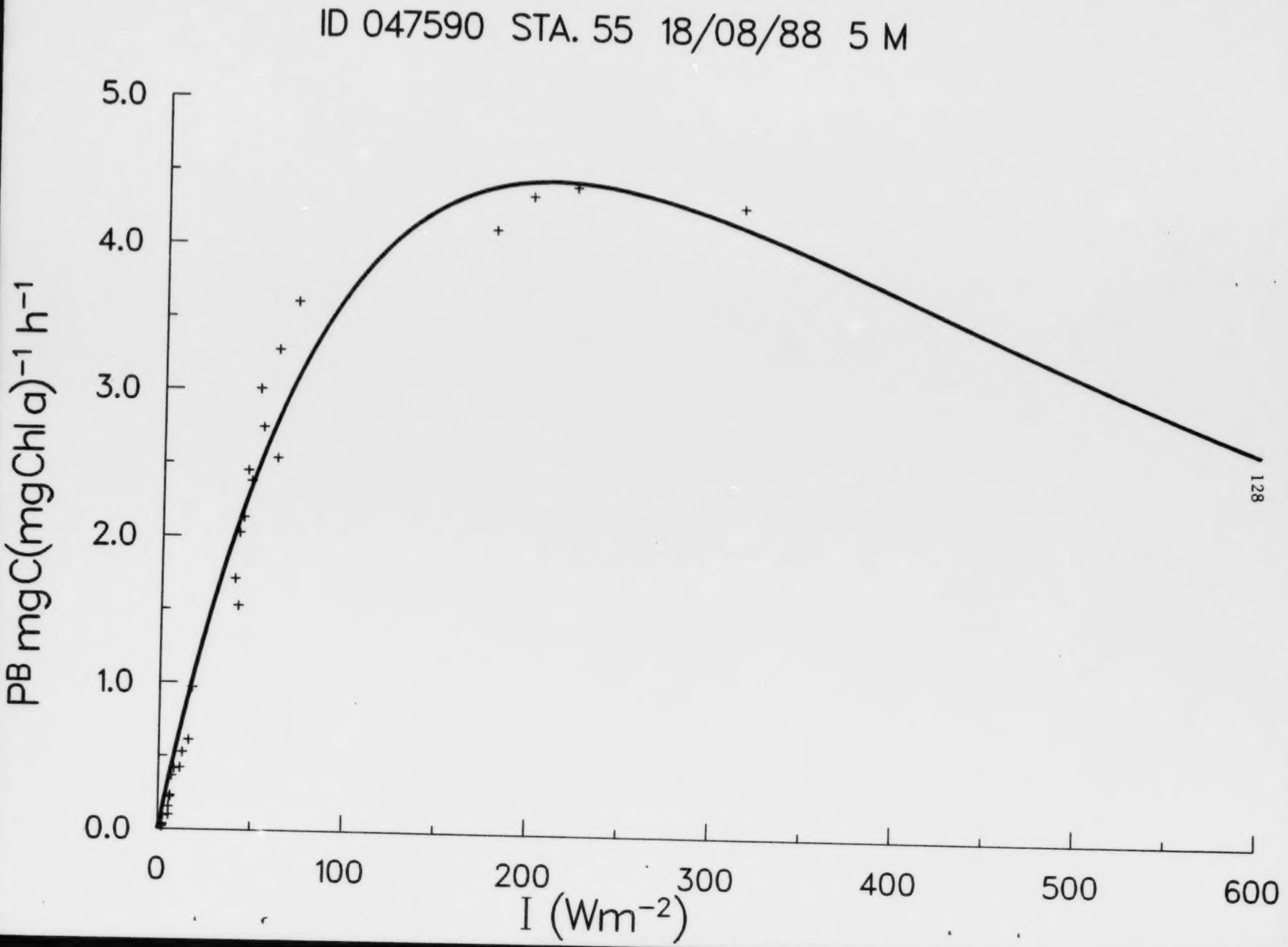

ID 047569 STA. 23 17/08/88 1 M
PB mgC(mgChl a)⁻¹ h⁻¹
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

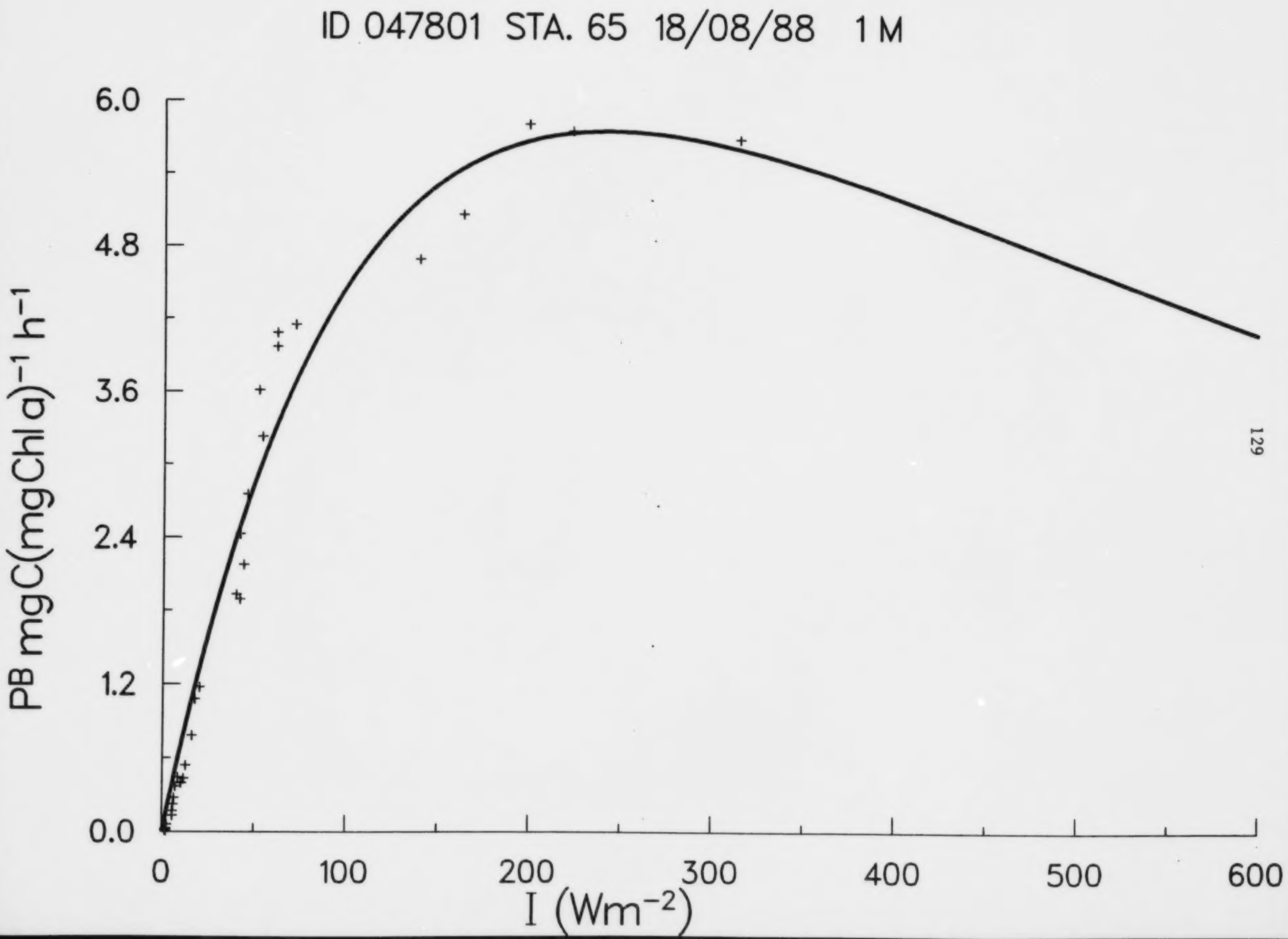

ID 047571 STA. 23 17/08/88 10 M
PB mgC(mgChl a)-1 h-1
5.5
4.4
3.3
2.2
1.1
0.0
0
100
200
300
400
500
600
I (Wm-2)

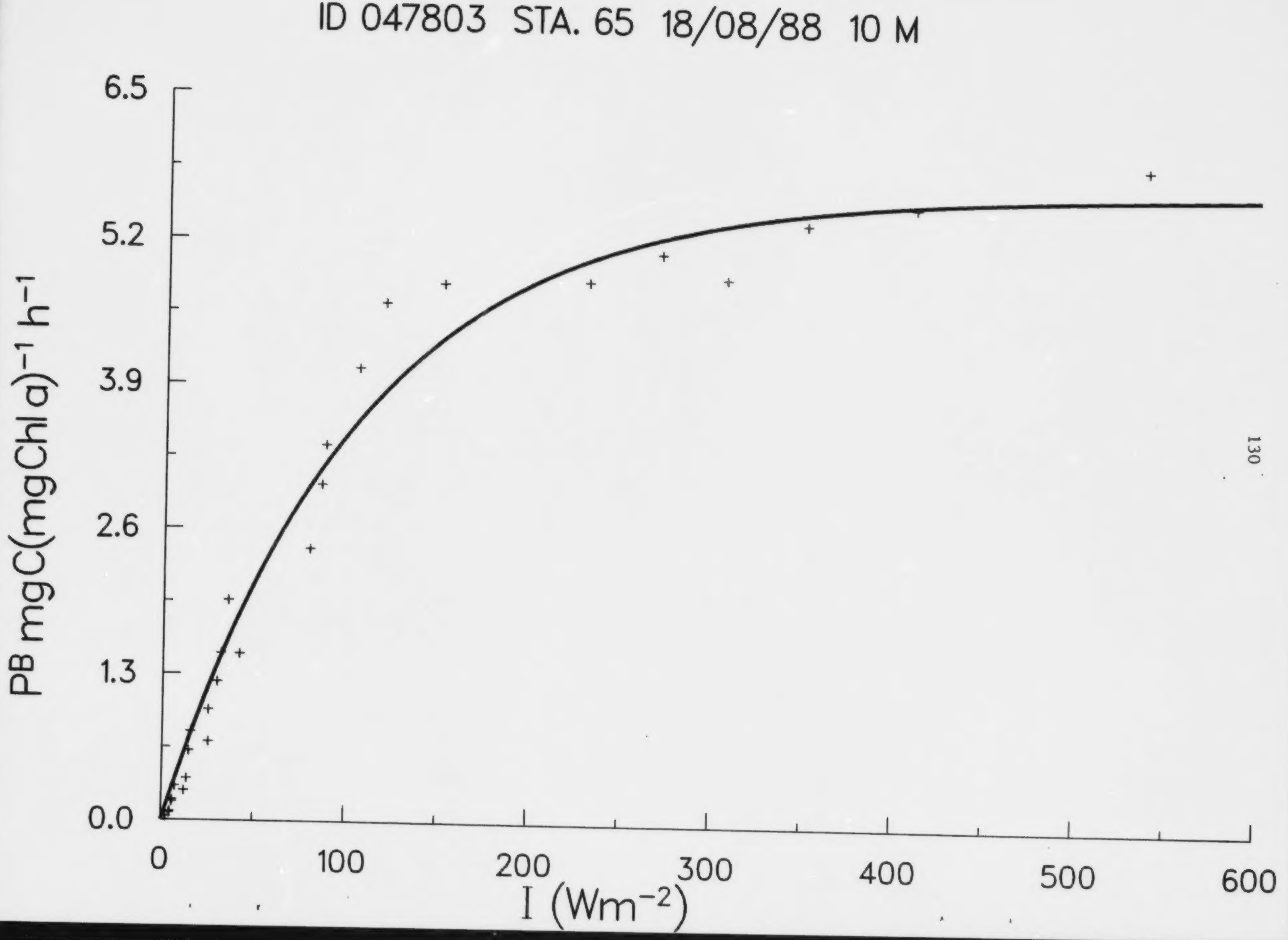

ID 047573 STA. 23 17/08/88 20 M
PB mgC(mgChl a)-1 h-1
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm-2)
125

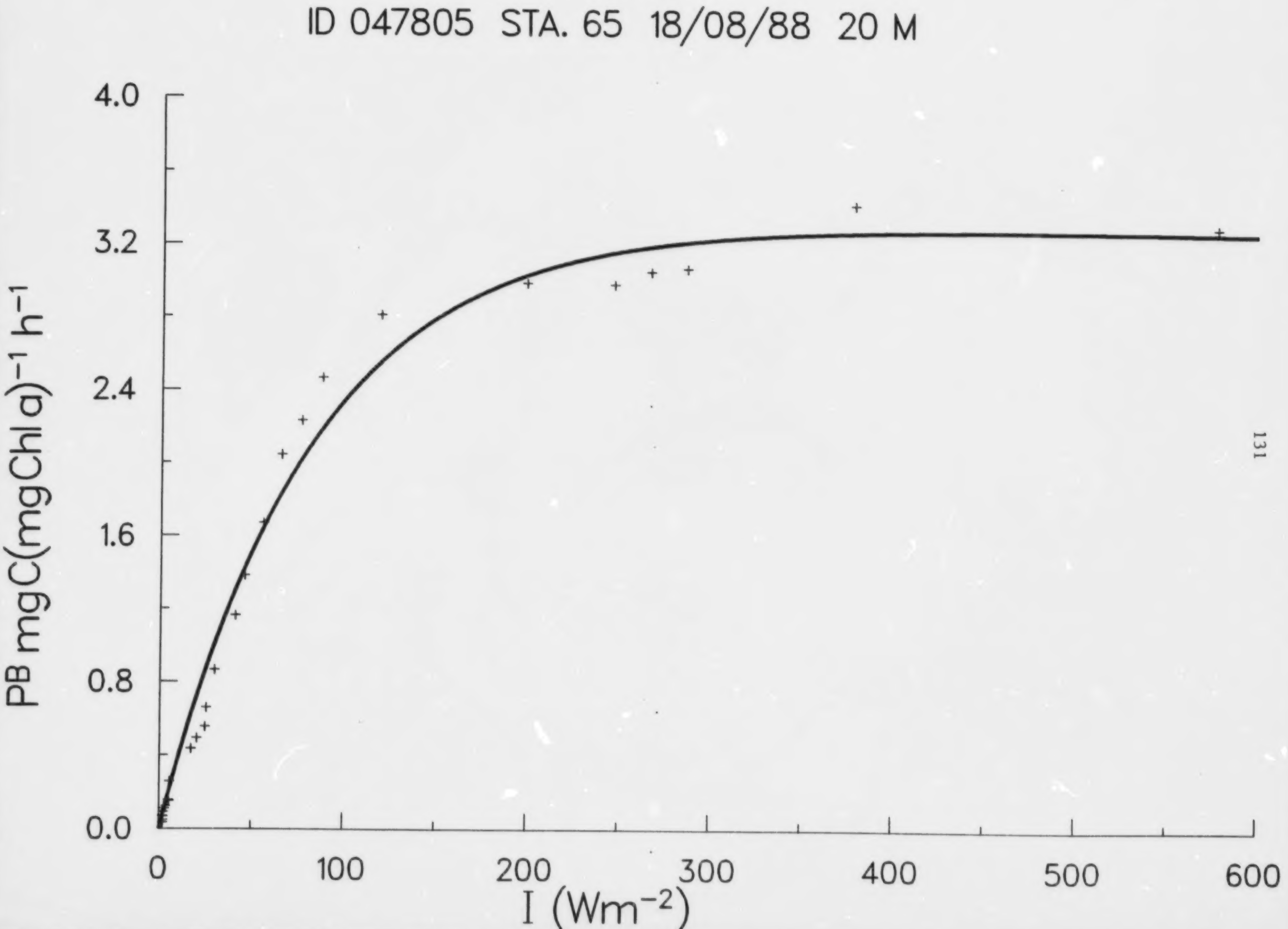

ID 047594 STA. 55 18/08/88 25 M
PB mgC(mgChl a)-1 h-1
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm-2)

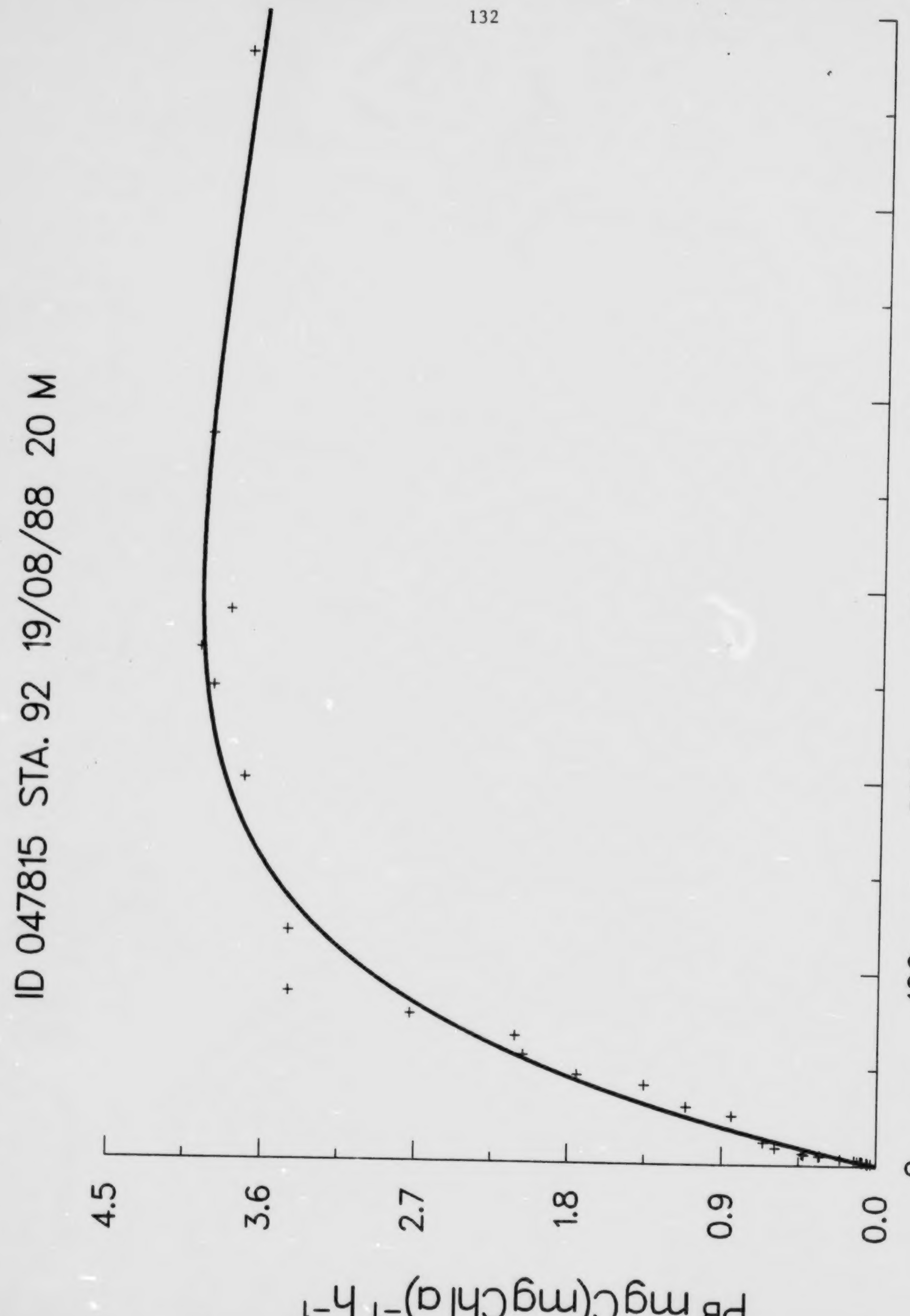

ID 047592 STA. 55 18/08/88 15 M
PB mgC(mgChl a)-1 h-1
5.5
4.4
3.3
2.2
1.1
0.0
0
100
200
300
400
500
600
I (Wm-2)

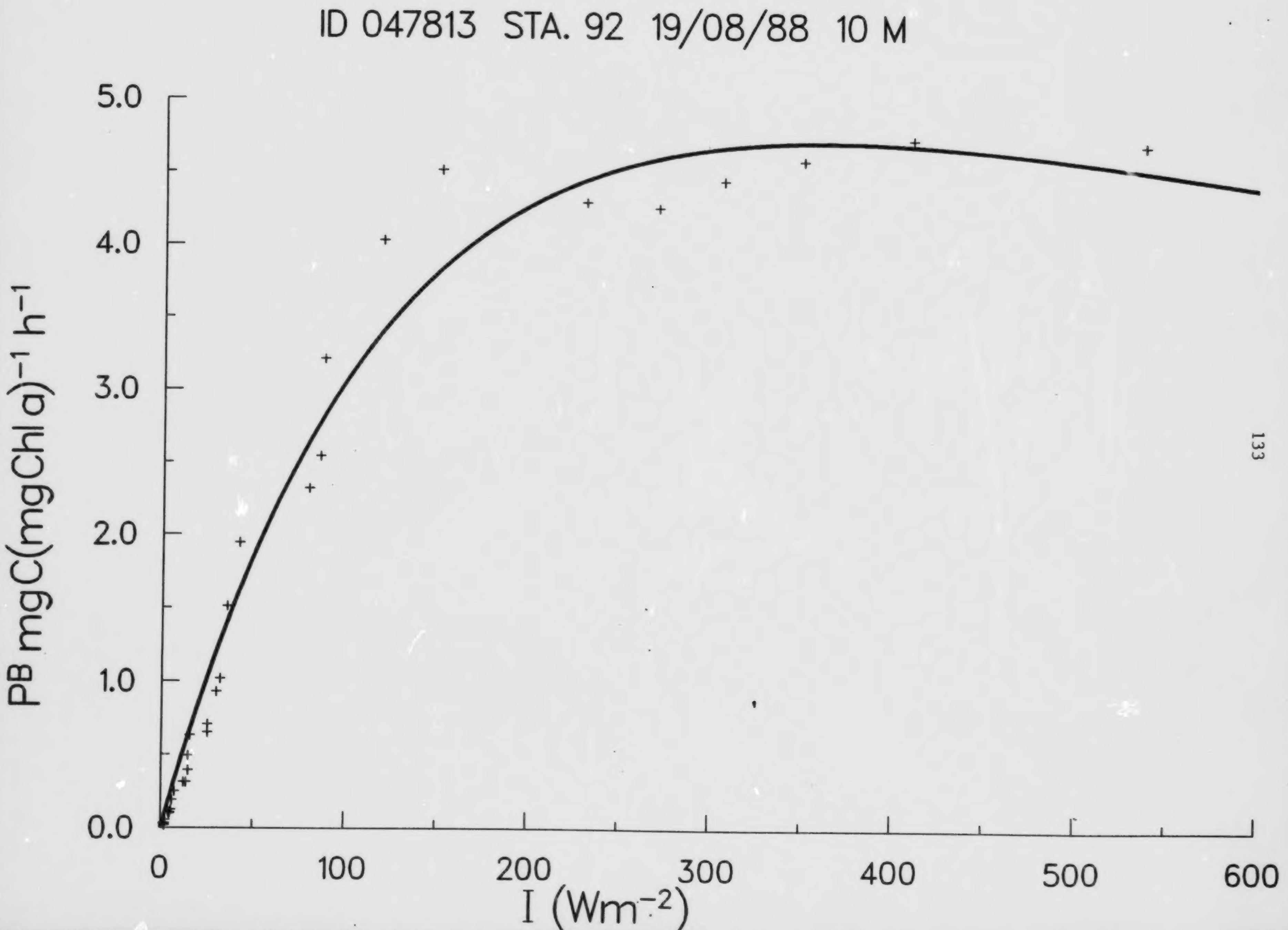

ID 047590 STA. 55 18/08/88 5 M
PB mgC(mgChl a)⁻¹ h⁻¹
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

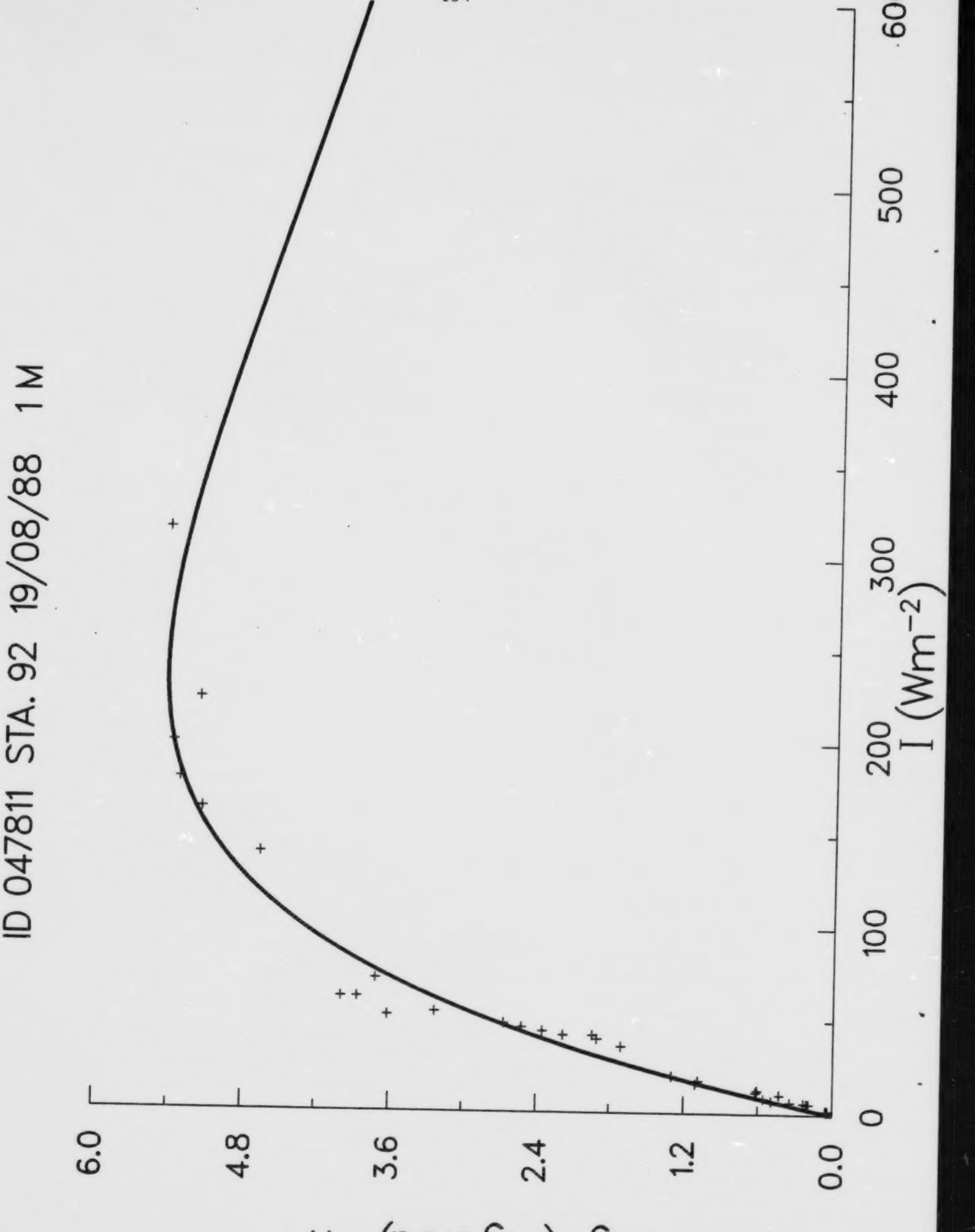

ID 047801 STA. 65 18/08/88 1 M
PB mgC(mgChl a)-1 h-1
6.0
4.8
3.6
2.4
1.2
0.0
0
100
200
300
400
500
600
I (Wm-2)

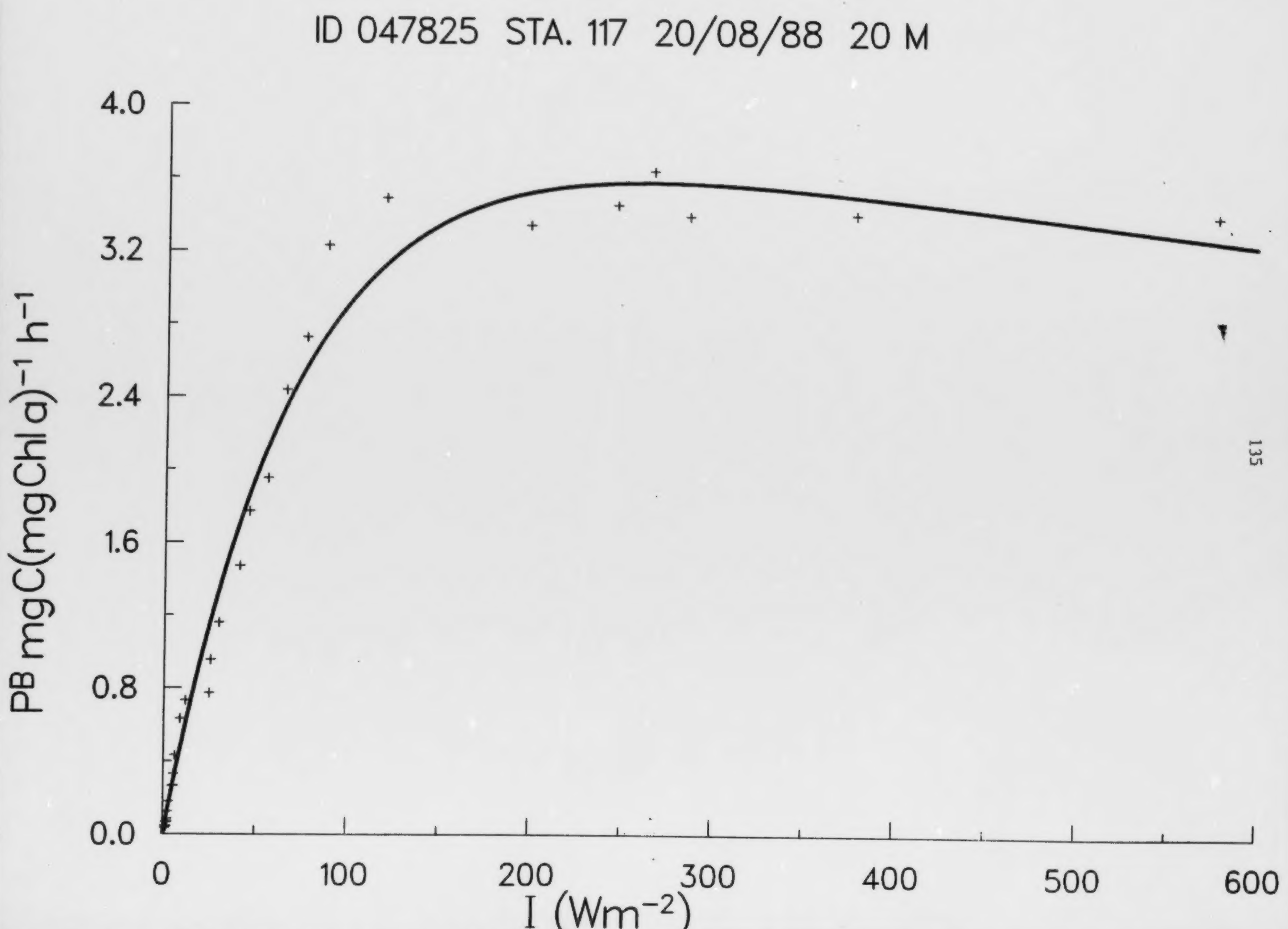

ID 047803 STA. 65 18/08/88 10 M
6.5
5.2
3.9
2.6
1.3
0.0
PB mgC(mgChl a)⁻¹ h⁻¹
0
100
200
300
400
500
600
I (Wm⁻²)

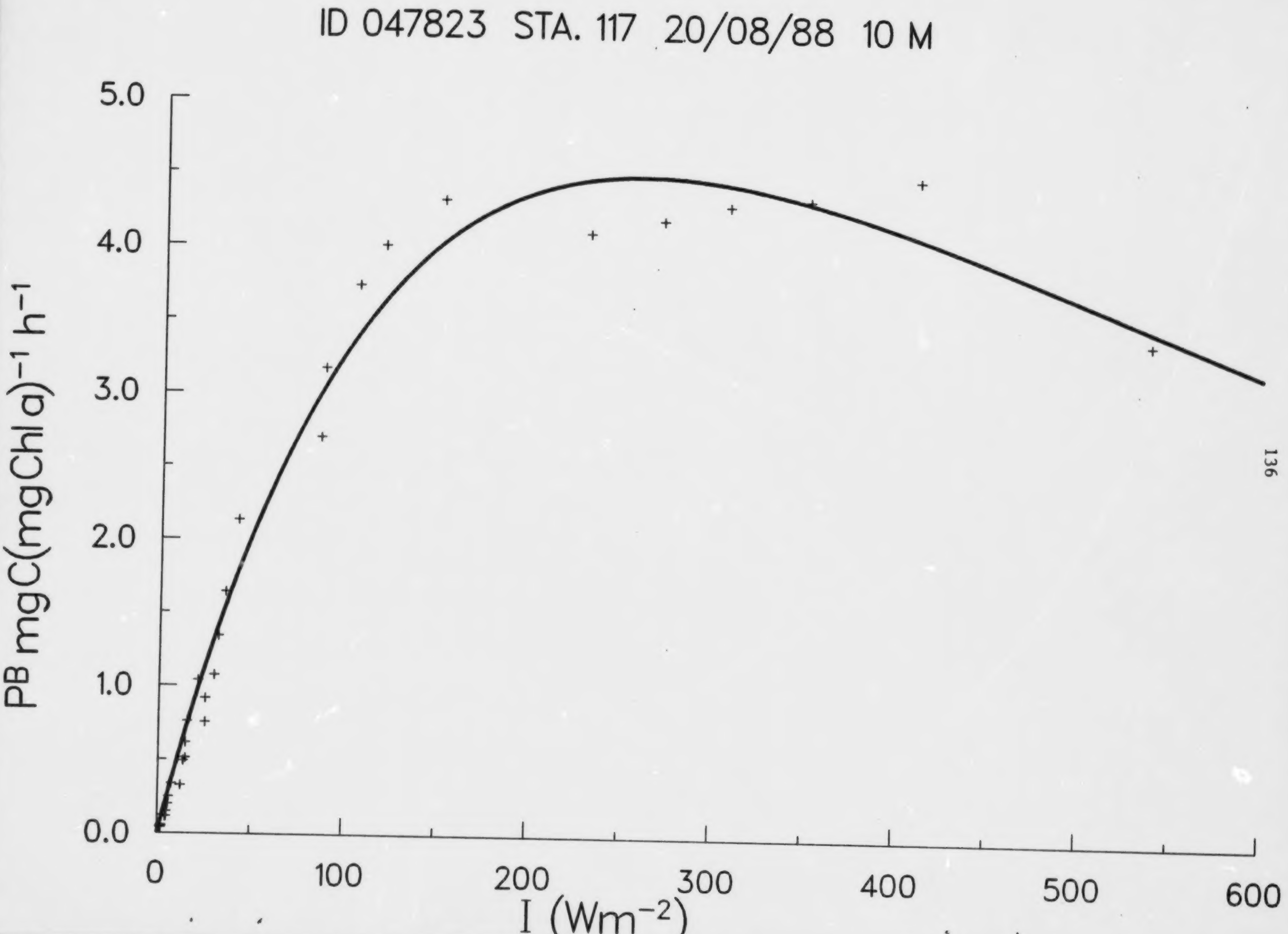

ID 047805 STA. 65 18/08/88 20 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
I (Wm^{-2})

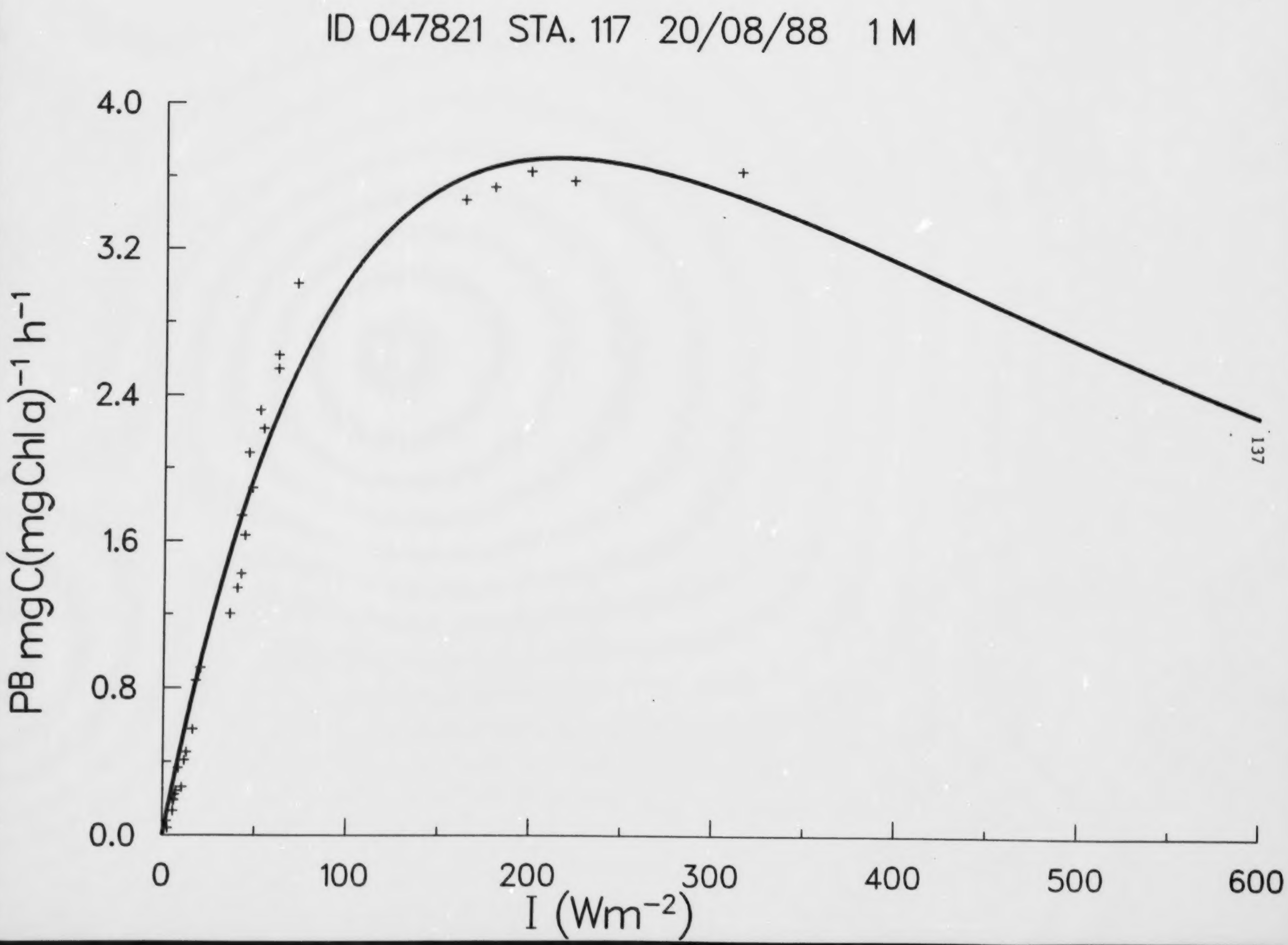

ID 0477815 STA. 92 19/08/88 20 M
PB mgC(mgChl a)⁻¹ h⁻¹
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm⁻²)


ID 047813 STA. 92 19/08/88 10 M
PB mgC(mgChl a)-1 h-1
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
I (Wm-2)

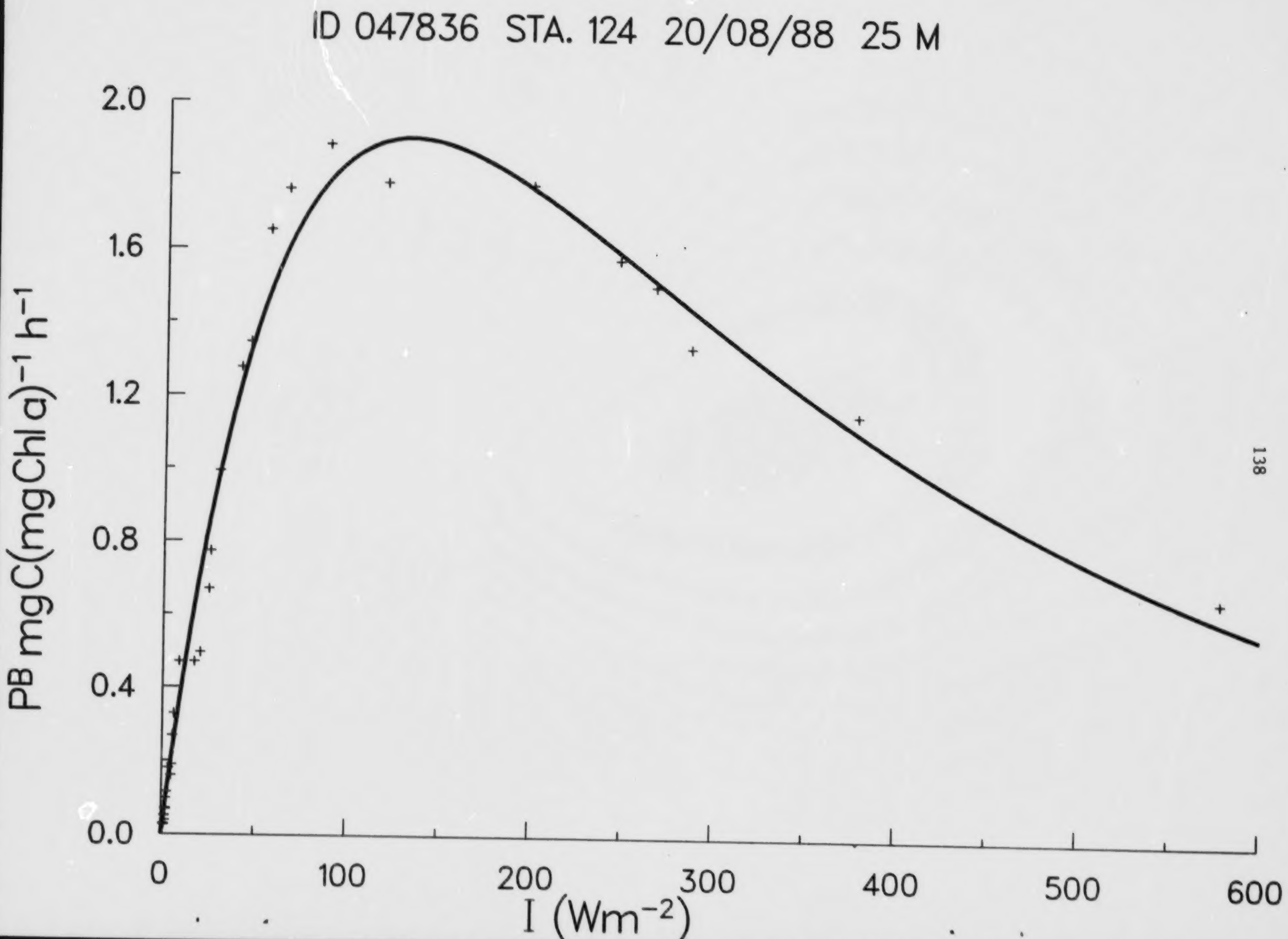

ID 047811 STA. 92 19/08/88 1 M
PB mgC(mgChl a)⁻¹ h⁻¹
6.0
4.8
3.6
2.4
1.2
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

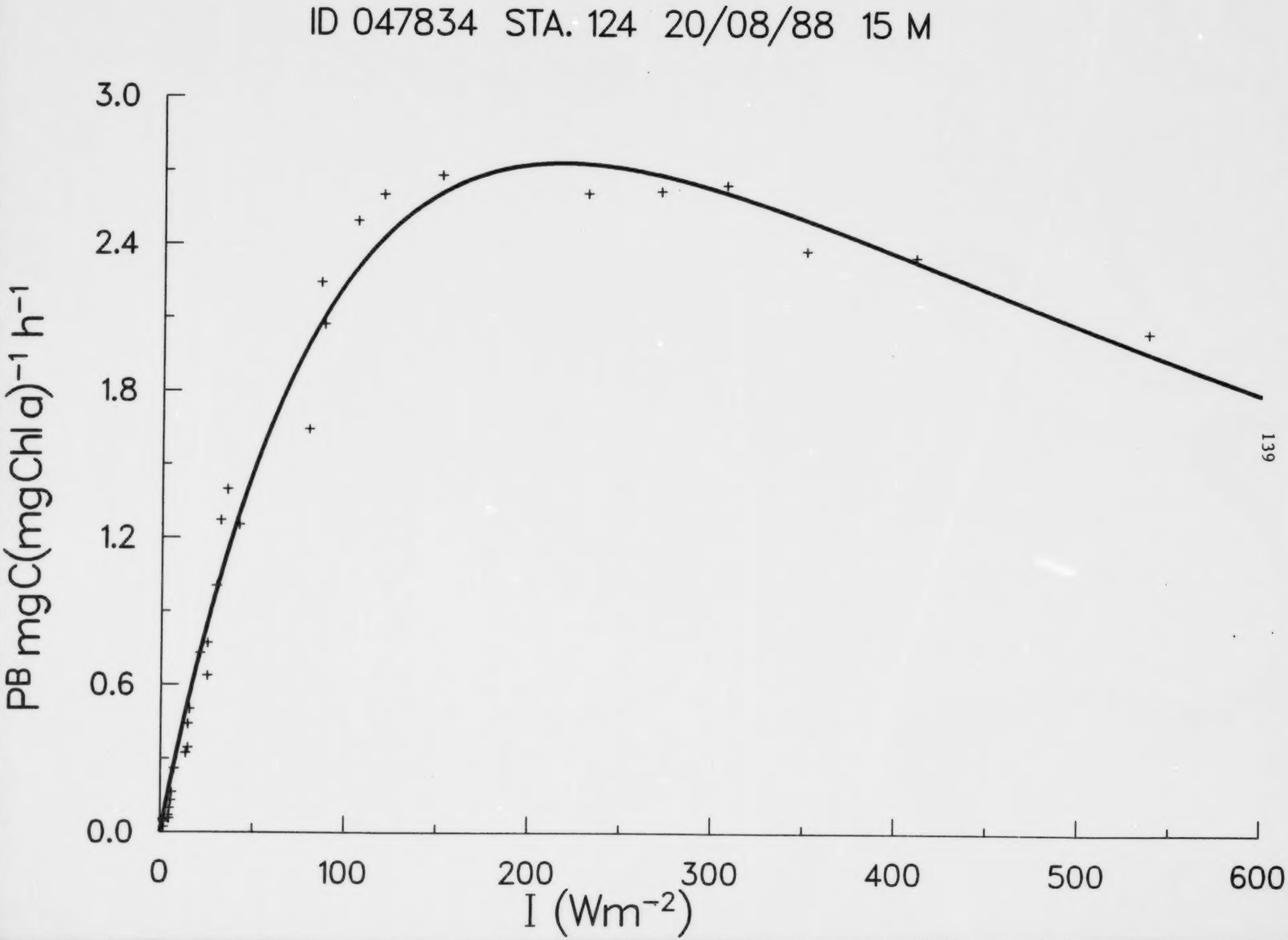

ID 047825 STA. 117 20/08/88 20 M
PB mgC(mgChl a)-1 h-1
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
I (Wm-2)

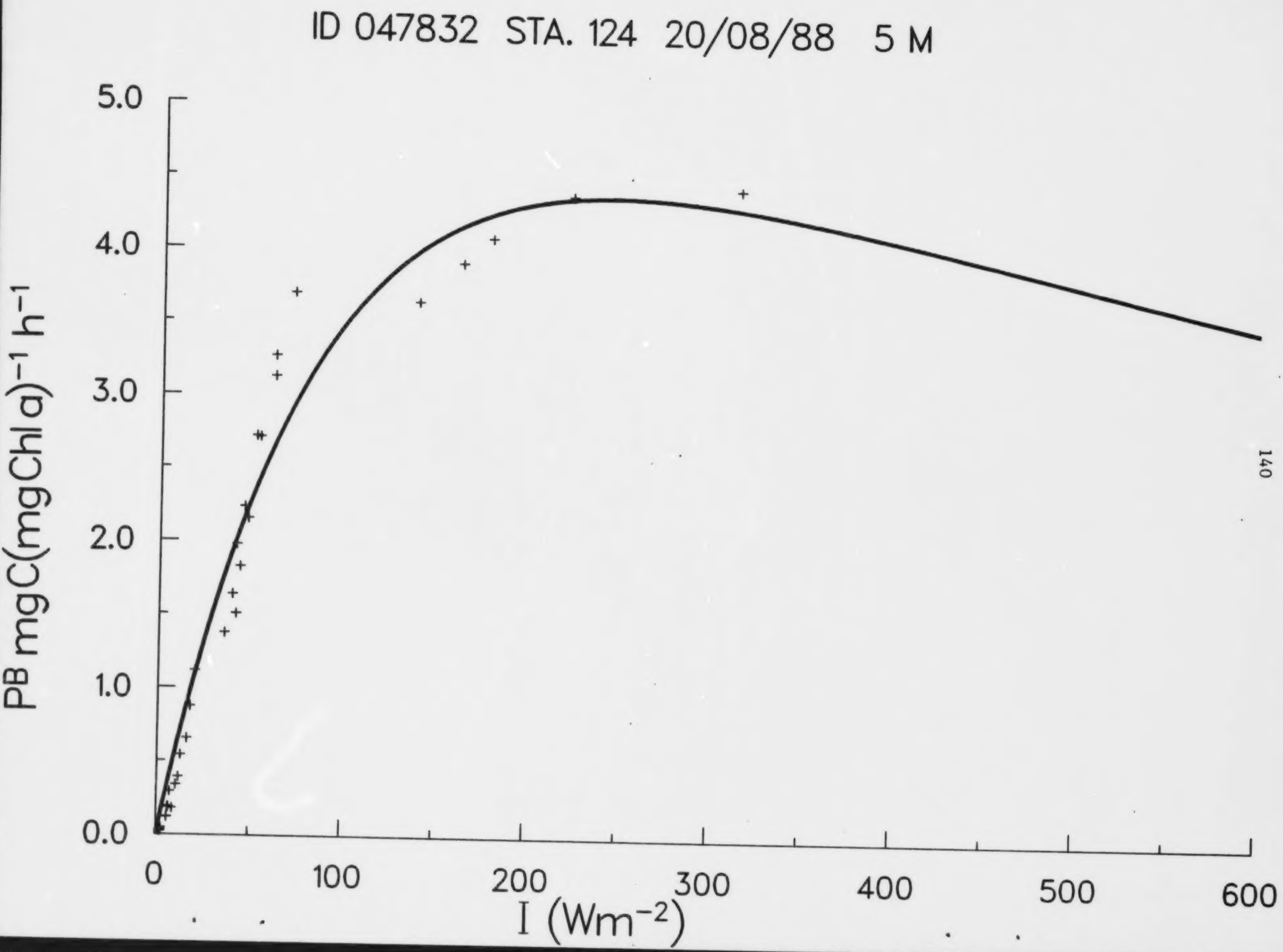

ID 047823 STA. 117 20/08/88 10 M
PB mgC(mgChl a)−1 h−1
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
I (Wm−2)



ID 047821 STA. 117 20/08/88 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
I (Wm^{-2})
137

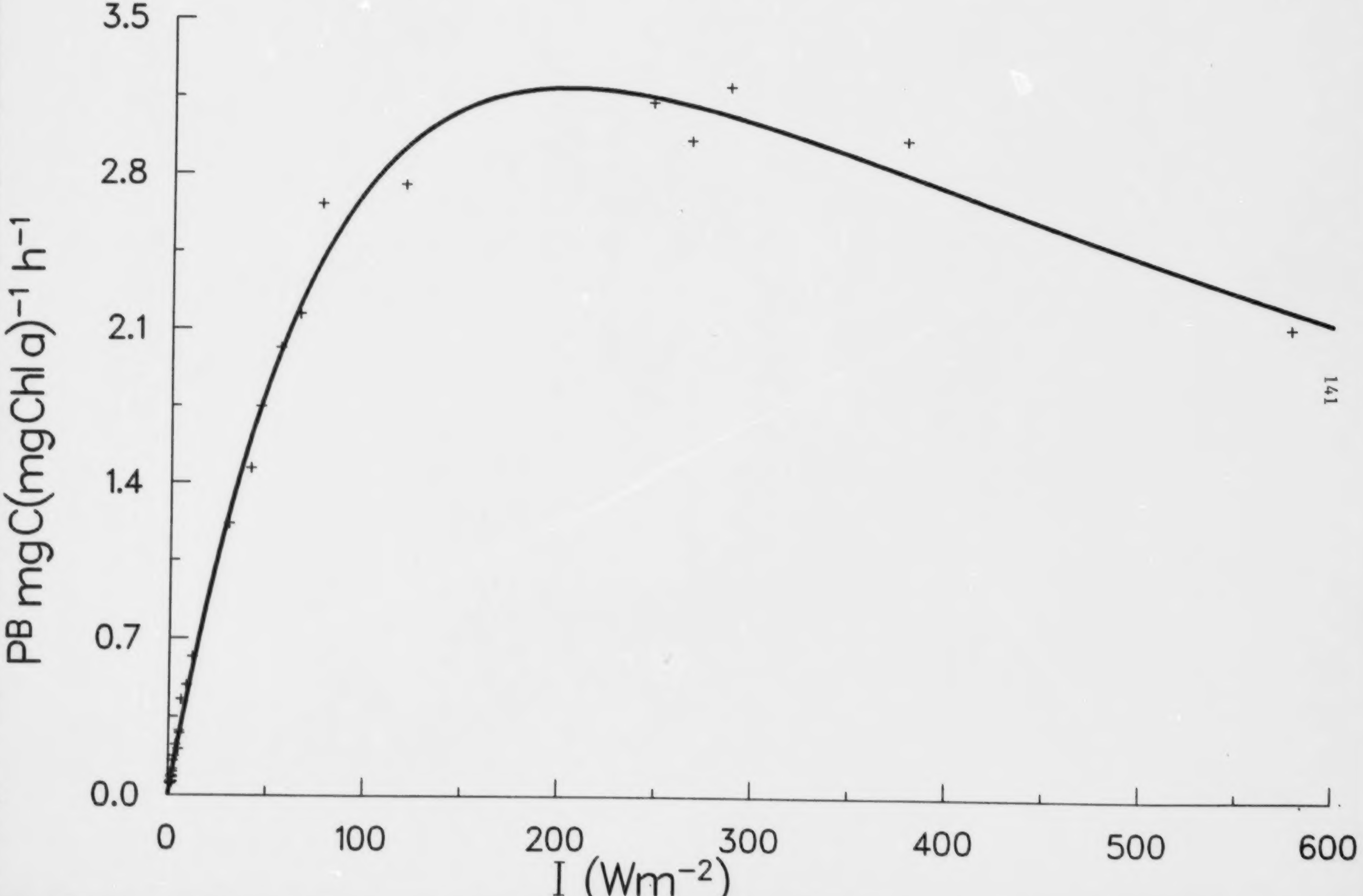

ID 047836 STA. 124 20/08/88 25 M
2.0
1.6
1.2
0.8
0.4
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)

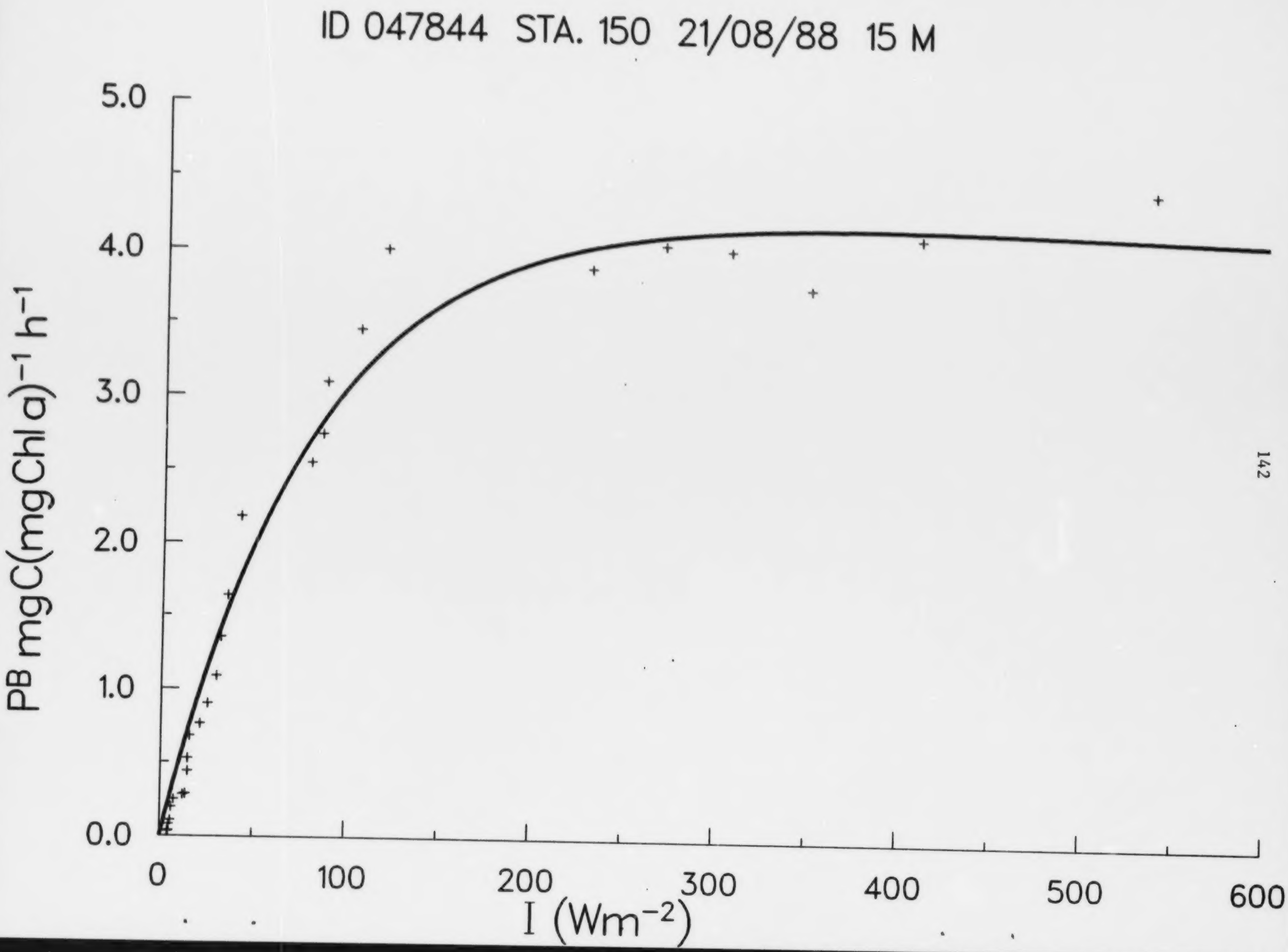

ID 047834 STA. 124 20/08/88 15 M
PB mgC(mgChl a)−1 h−1
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
I (Wm−2)

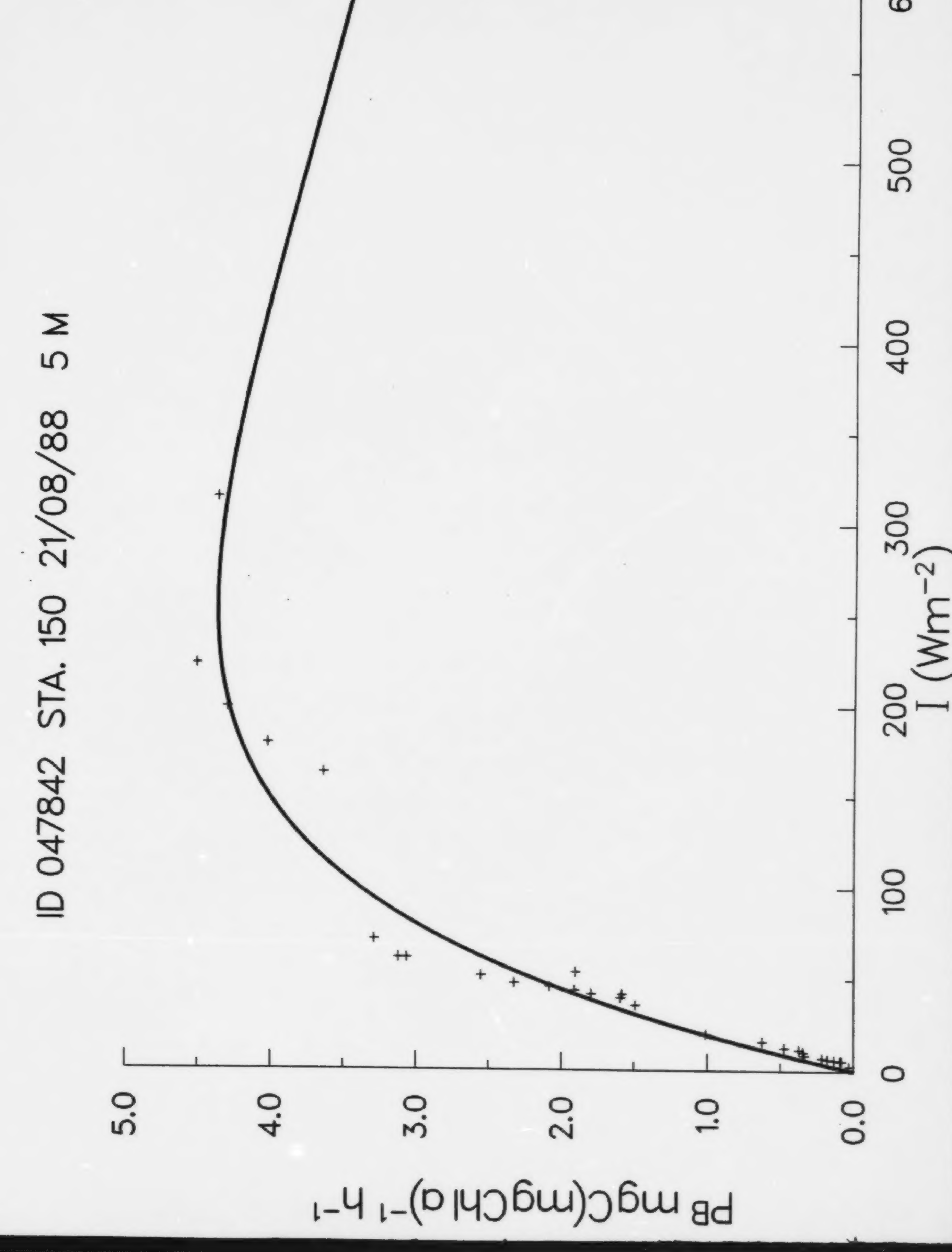


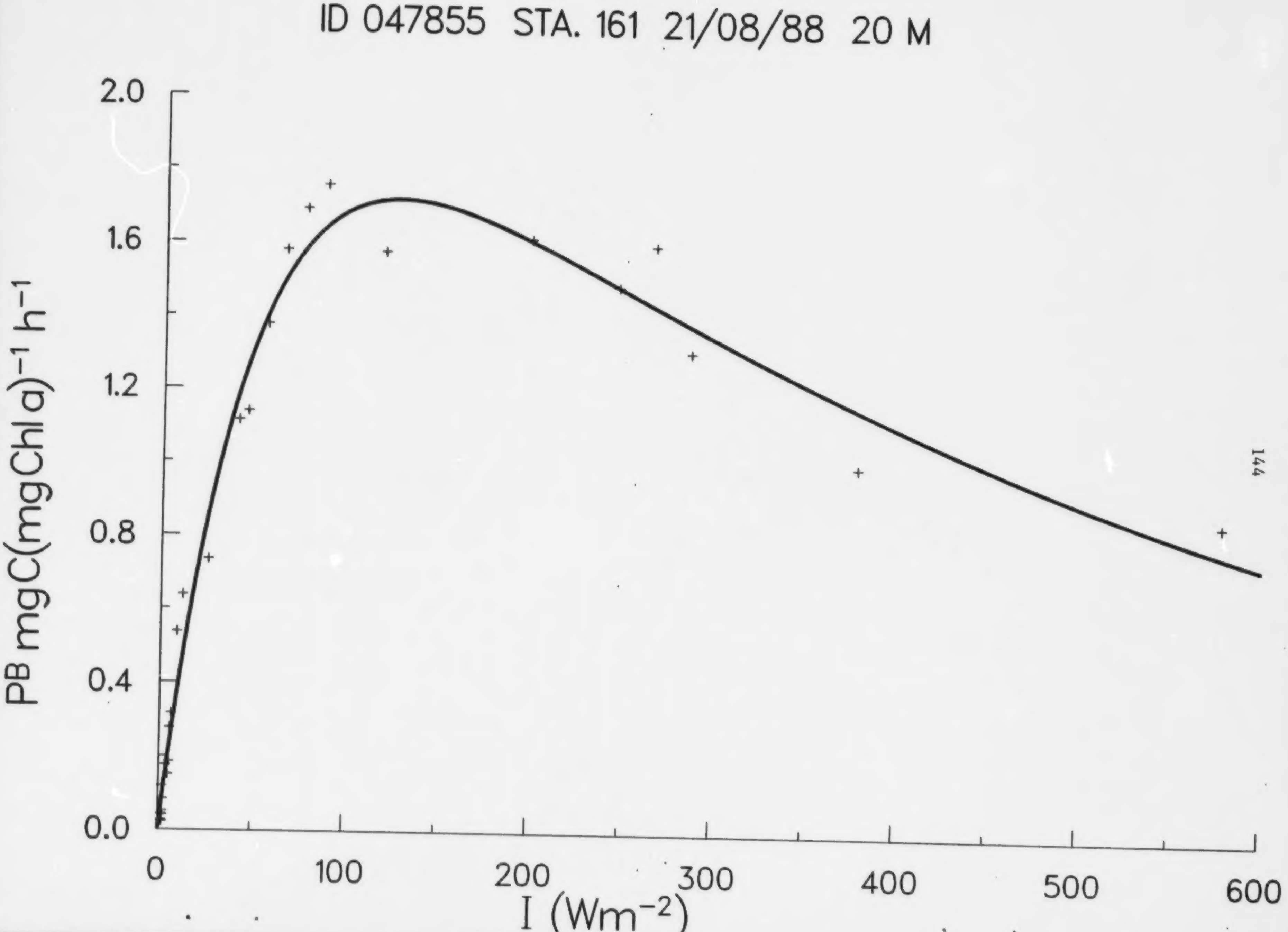
ID 047832 STA. 124 20/08/88 5 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
I (Wm^{-2})

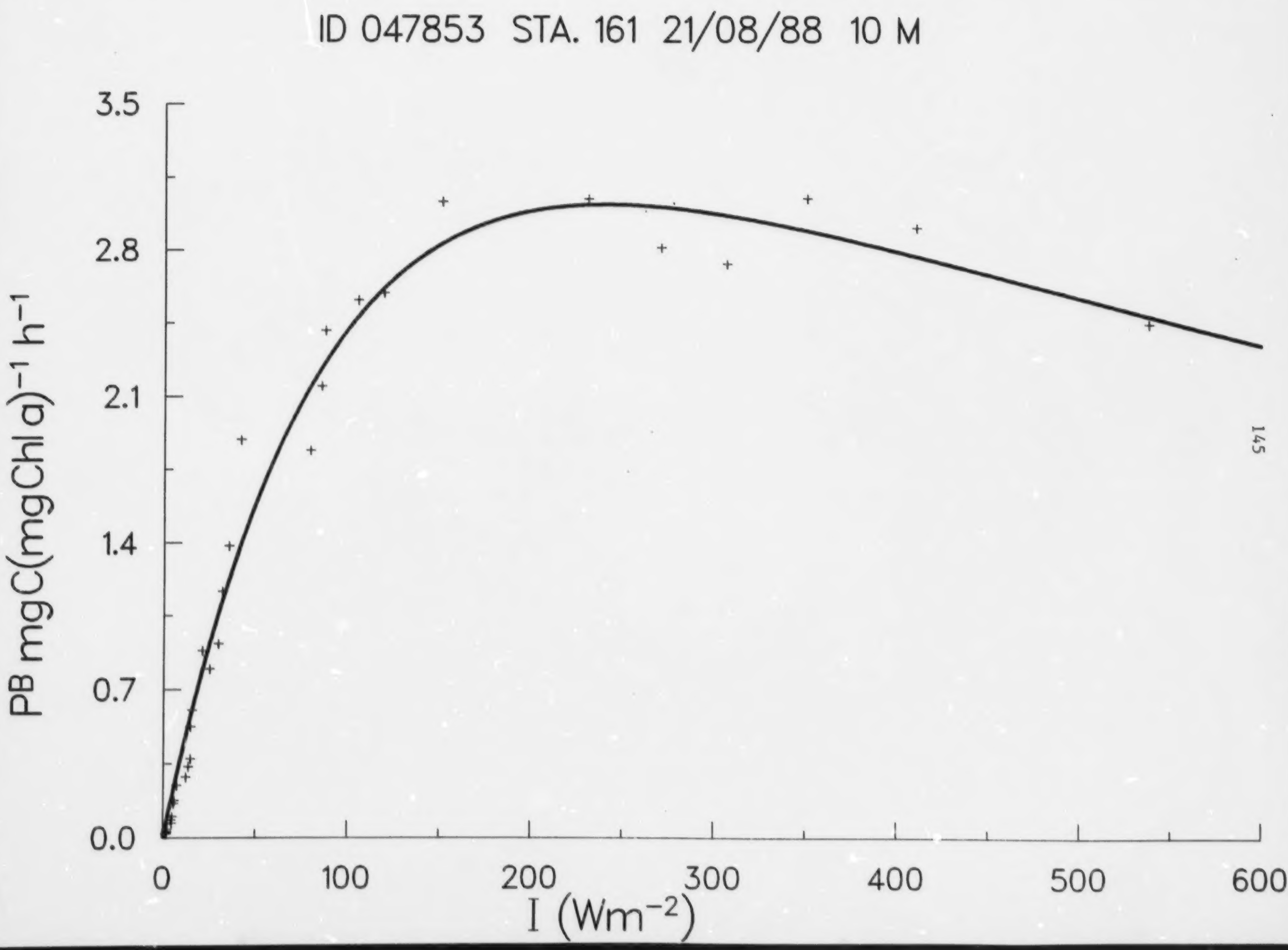
ID 047846 STA. 150 21/08/88 25 M

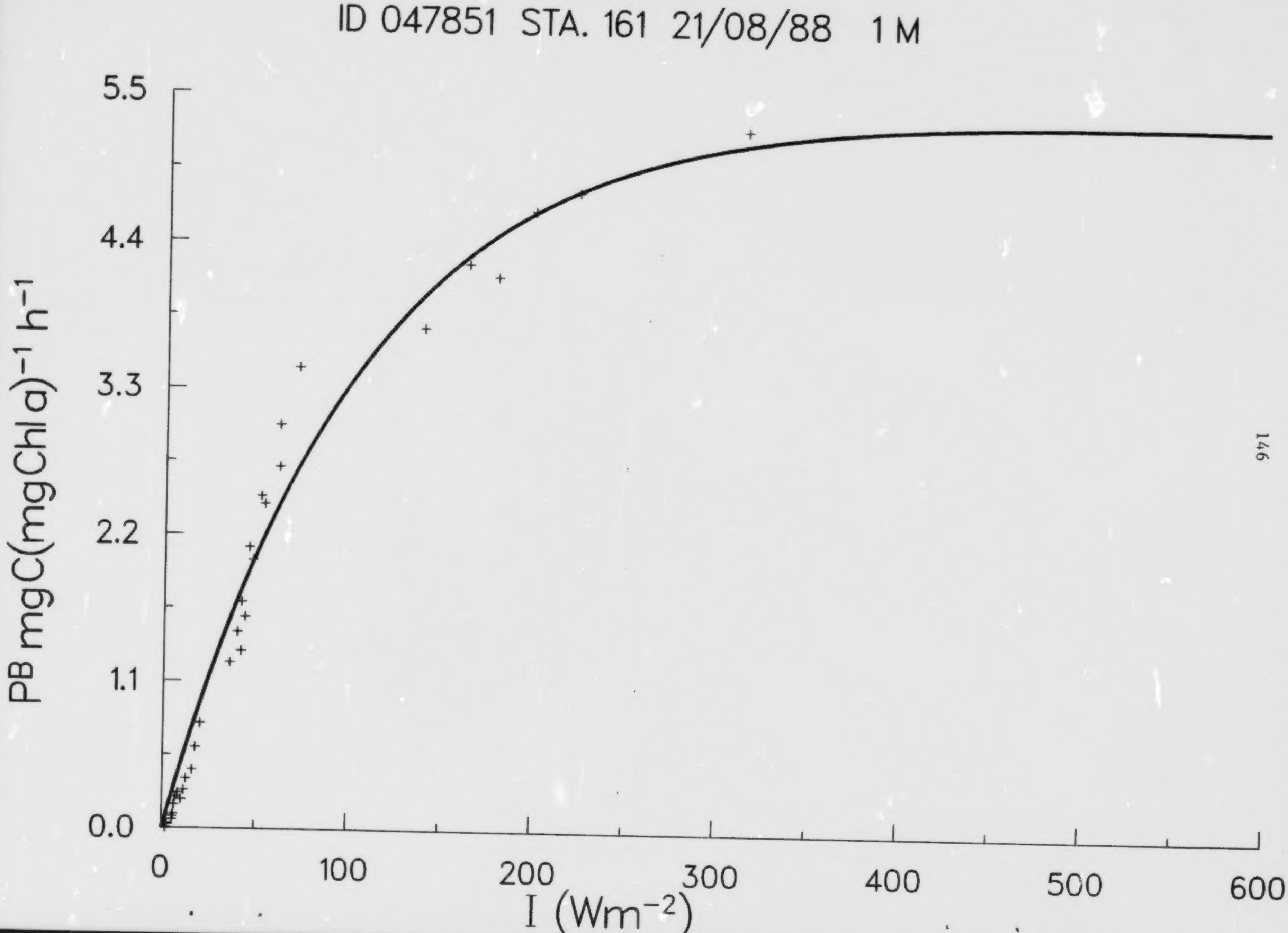


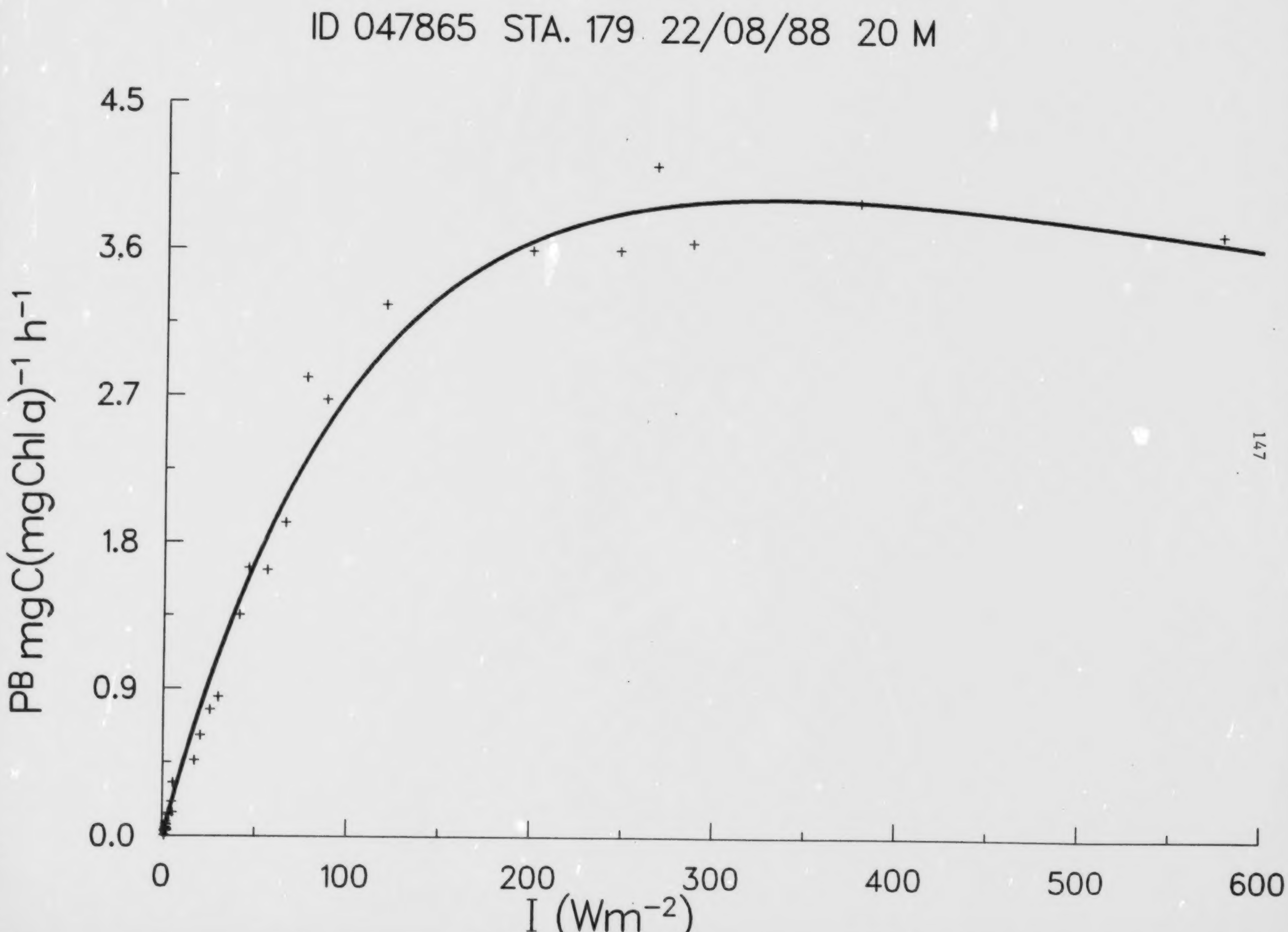

ID 047844 STA. 150 21/08/88 15 M
PB mgC(mgChl a)⁻¹ h⁻¹
0.0
1.0
2.0
3.0
4.0
5.0
0
100
200
300
400
500
600
I (Wm⁻²)

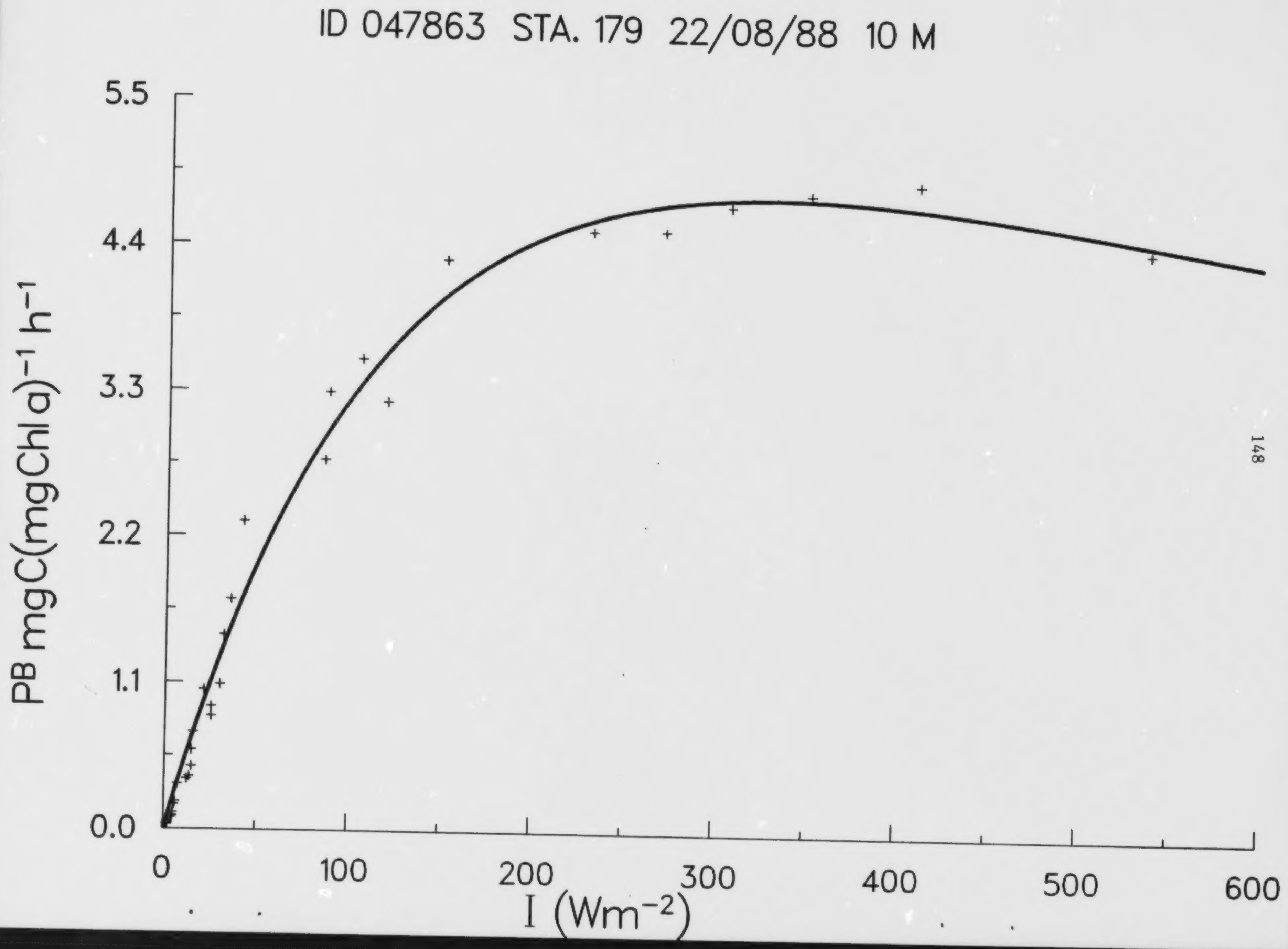

ID 047842 STA. 150 21/08/88 5 M
PB mgC(mgChl a)⁻¹ h⁻¹
0.0
1.0
2.0
3.0
4.0
5.0
0
100
200
300
400
500
600
I (Wm⁻²)

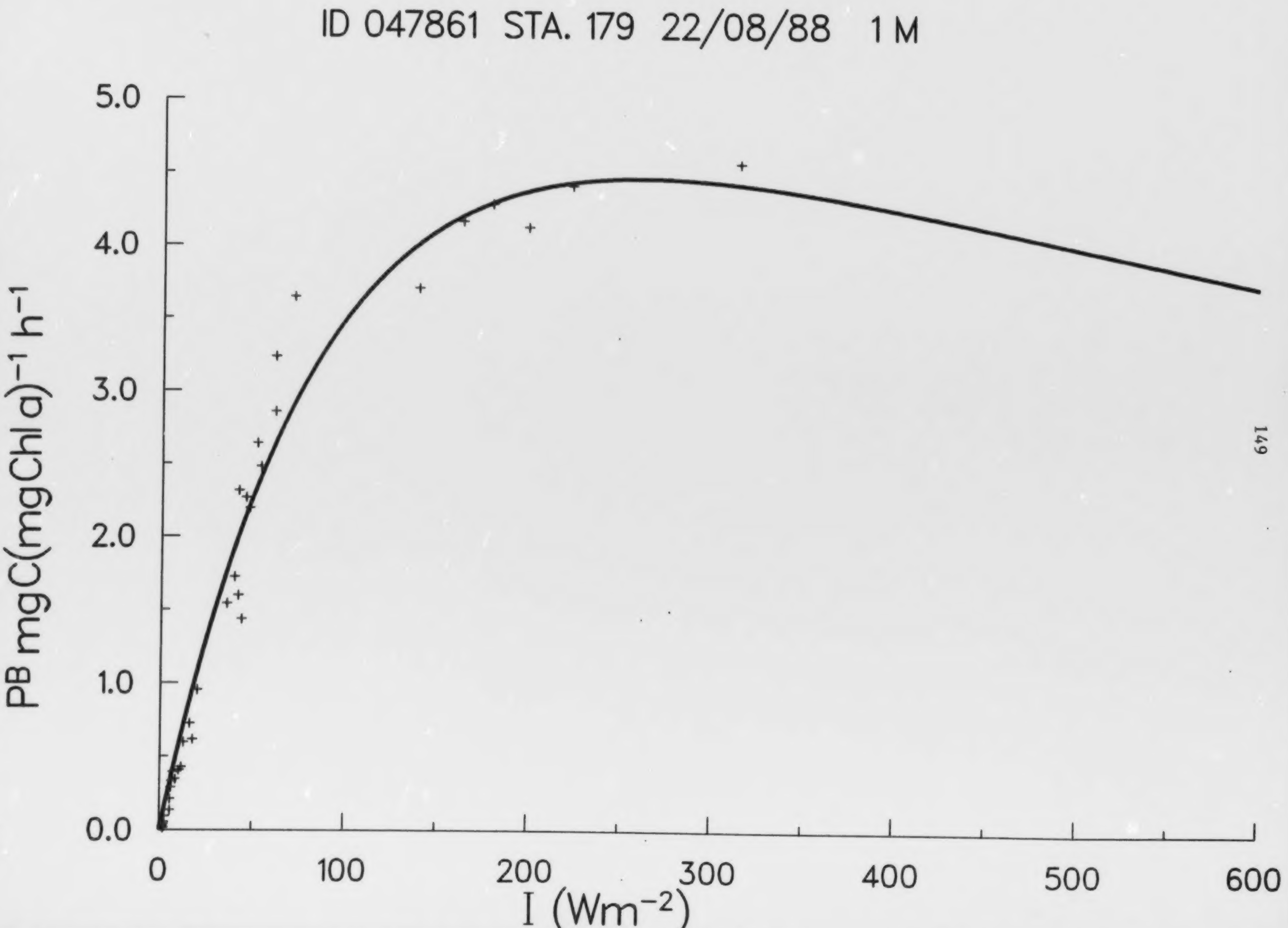

ID 047855 STA. 161 21/08/88 20 M
PB mgC(mgChl a)−1 h−1
2.0
1.6
1.2
0.8
0.4
0.0
0
100
200
300
400
500
600
I (Wm−2)

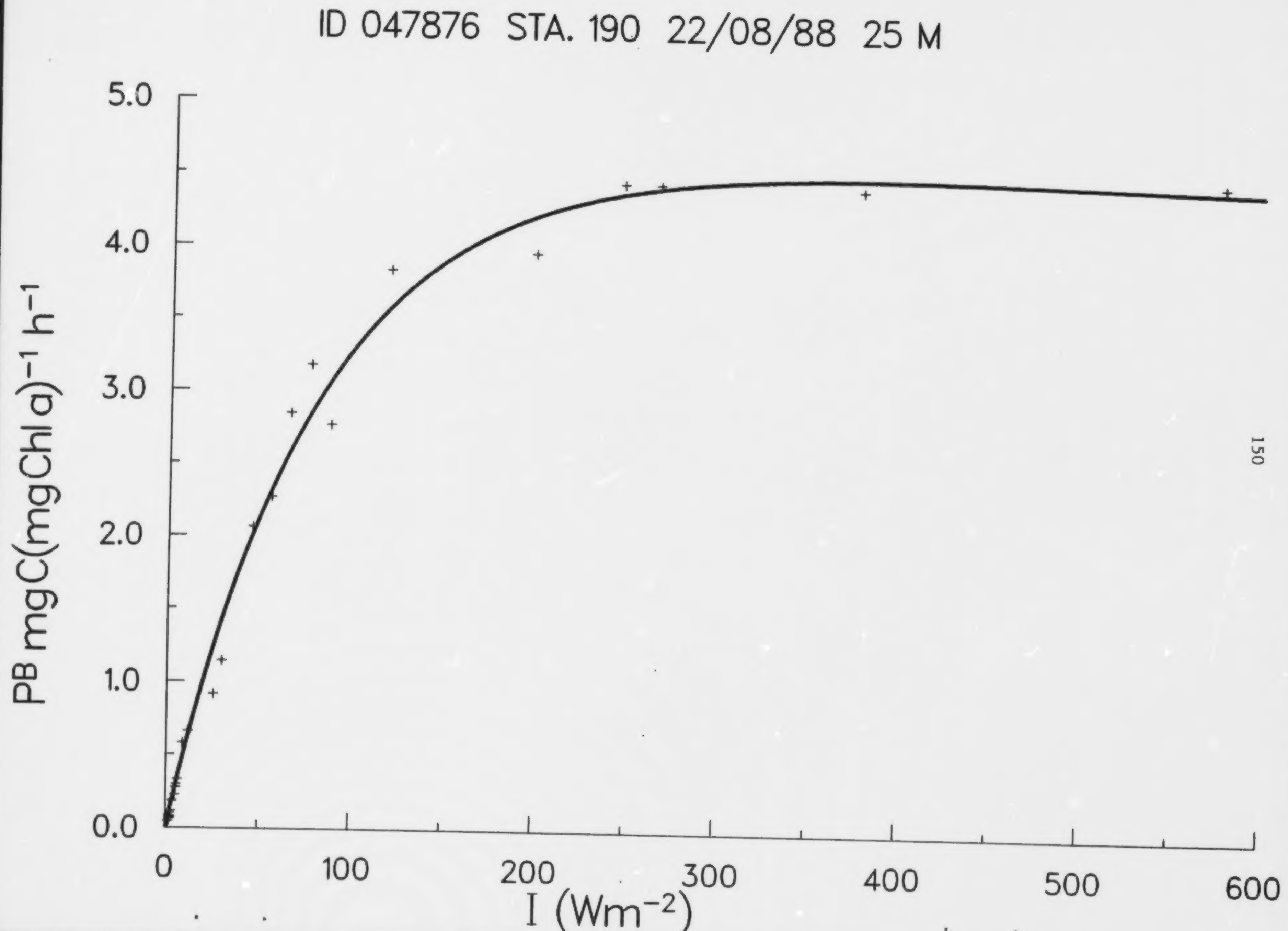

ID 047853 STA. 161 21/08/88 10 M
PB mgC(mgChl a)-1 h-1
3.5
2.8
2.1
1.4
0.7
0.0
0
100
200
300
400
500
600
I (Wm-2)

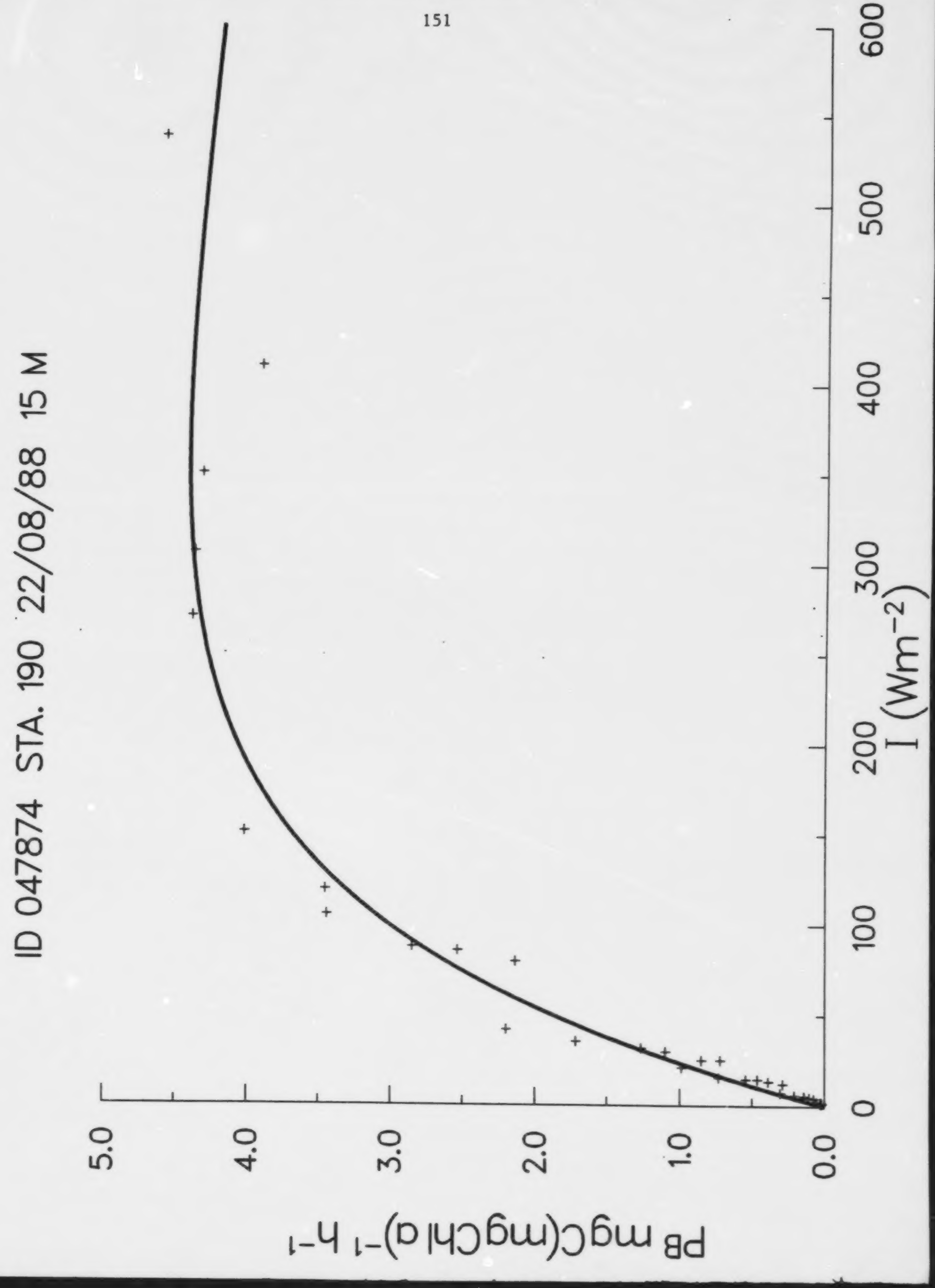

ID 047851 STA. 161 21/08/88 1 M
PB mgC(mgChl a)-1 h-1
5.5
4.4
3.3
2.2
1.1
0.0
0
100
200
300
400
500
600
I (Wm-2)

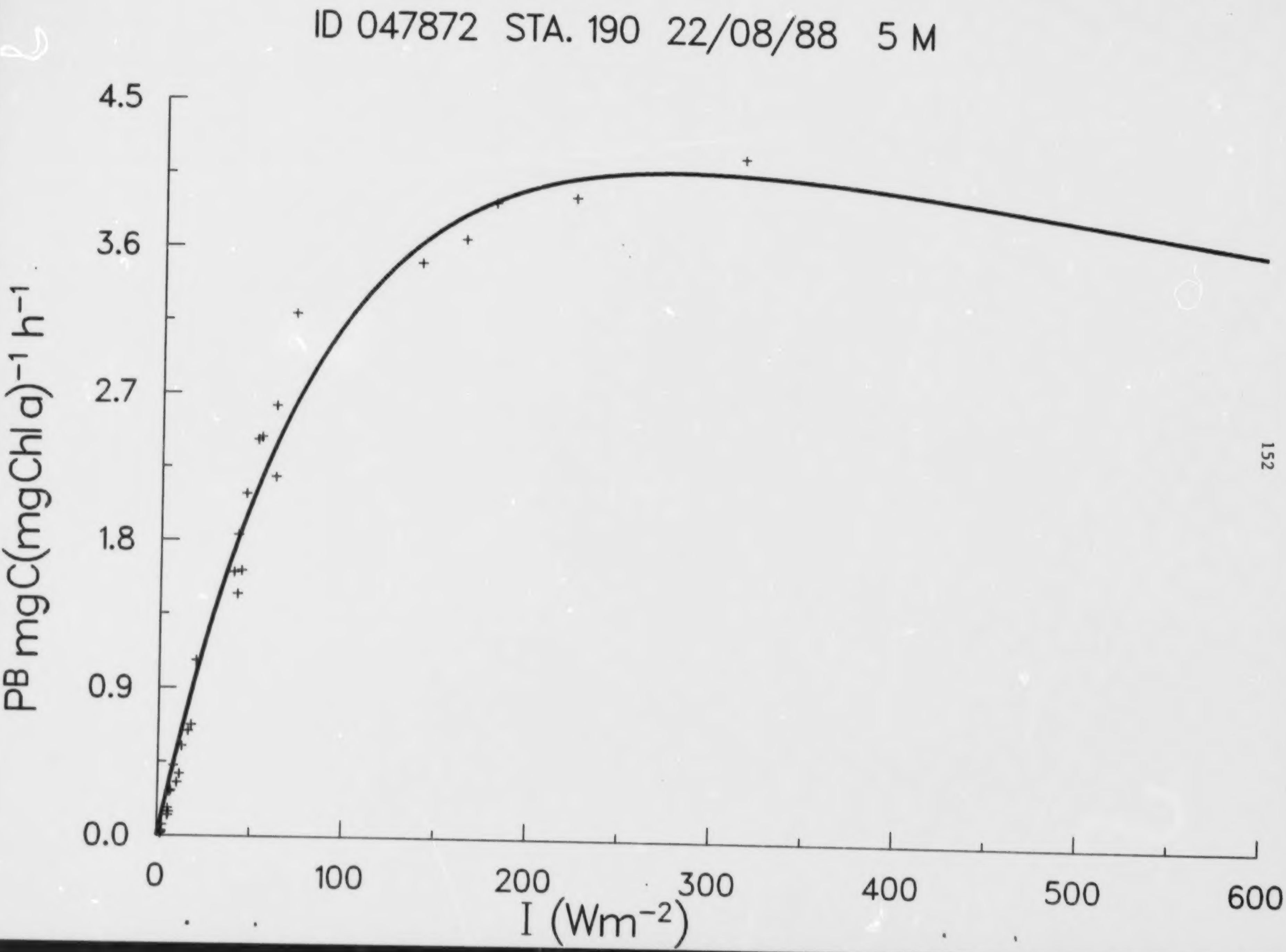

ID 047865 STA. 179 22/08/88 20 M
PB mgC(mgChl a)-1 h-1
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm-2)

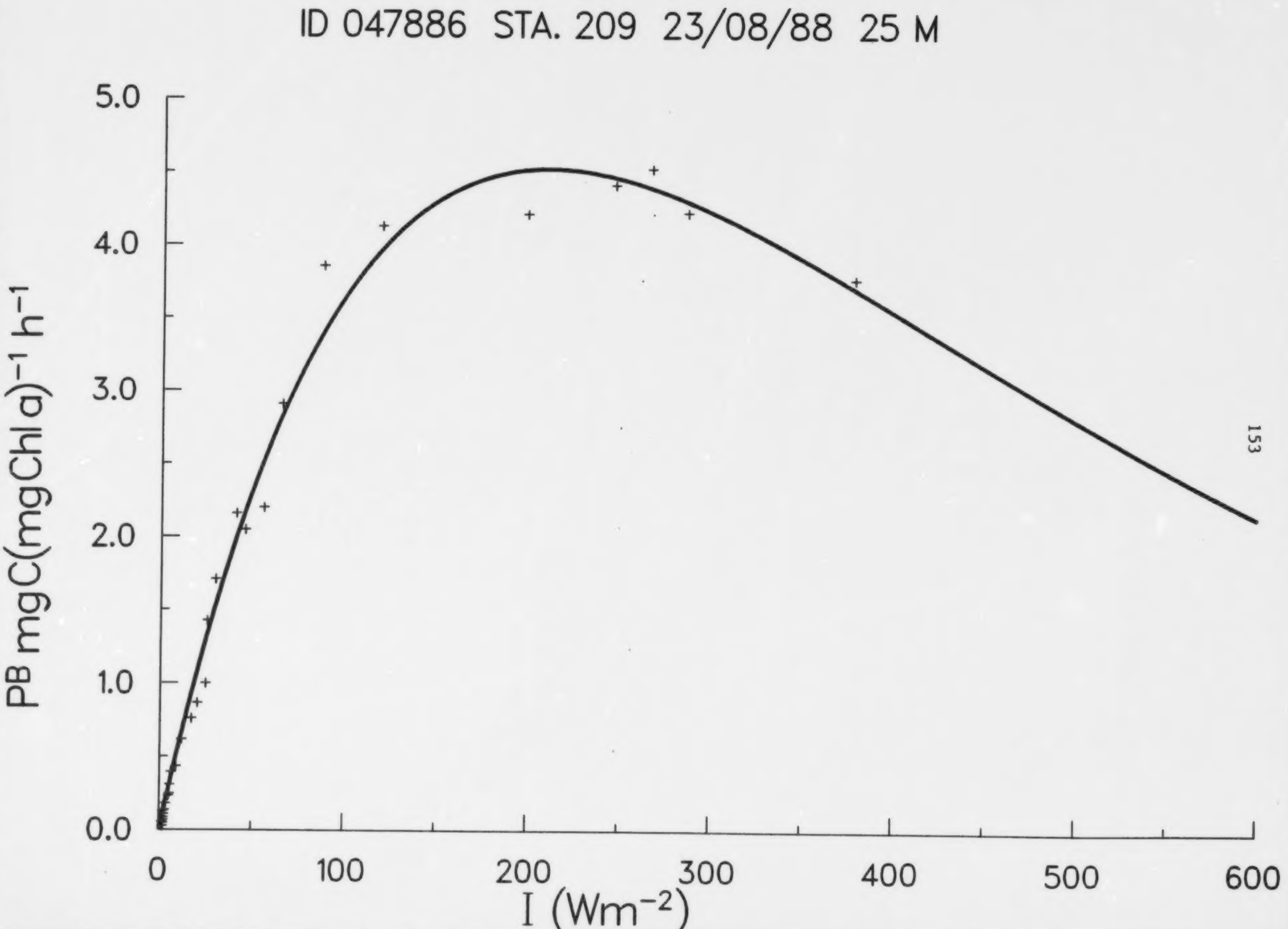

ID 047863 STA. 179 22/08/88 10 M
PB mgC(mgChl a)-1 h-1
5.5
4.4
3.3
2.2
1.1
0.0
0
100
200
300
400
500
600
I (Wm-2)

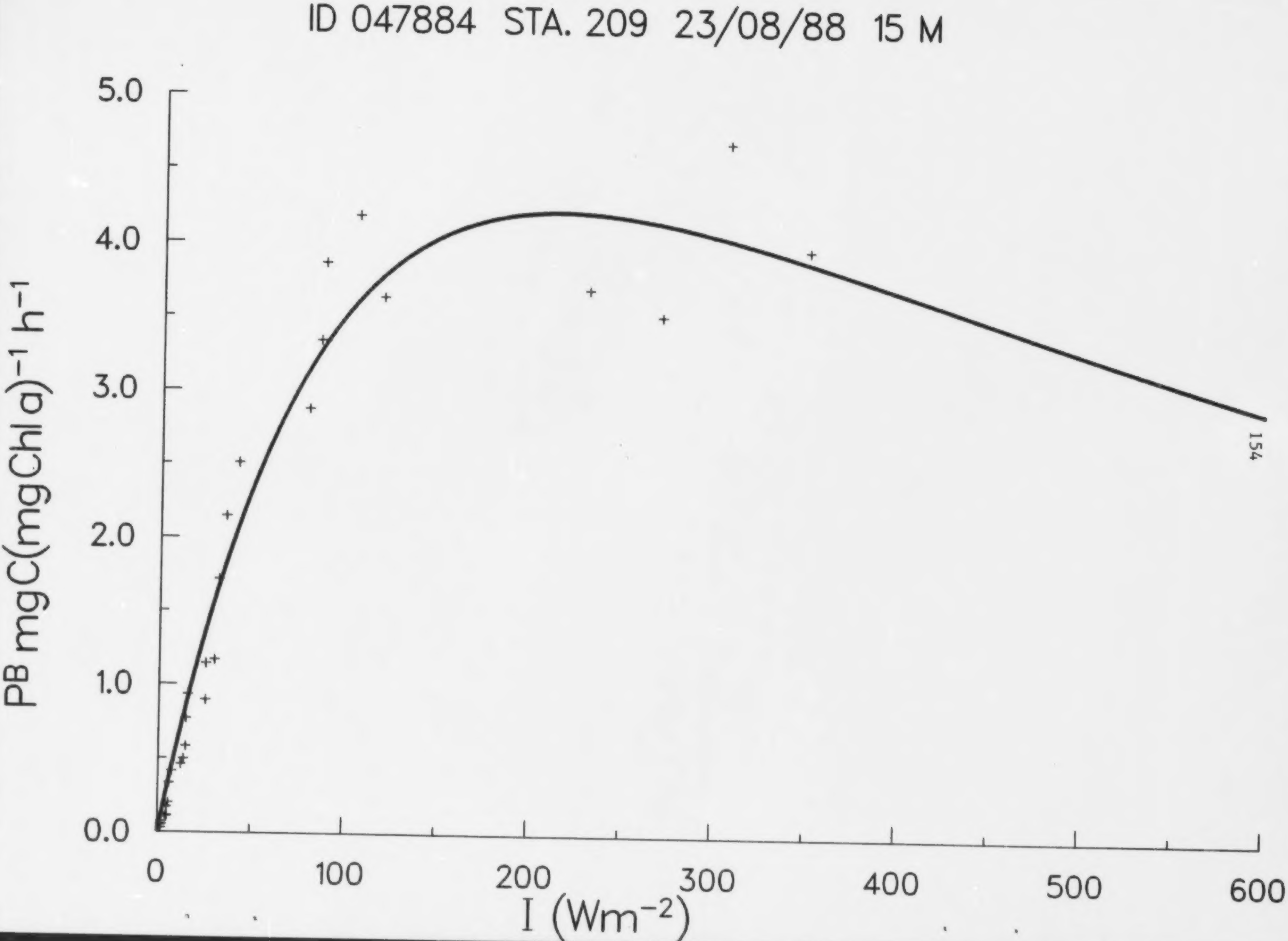

ID 047861 STA. 179 22/08/88 1 M
PB mgC(mgChl a)⁻¹ h⁻¹
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

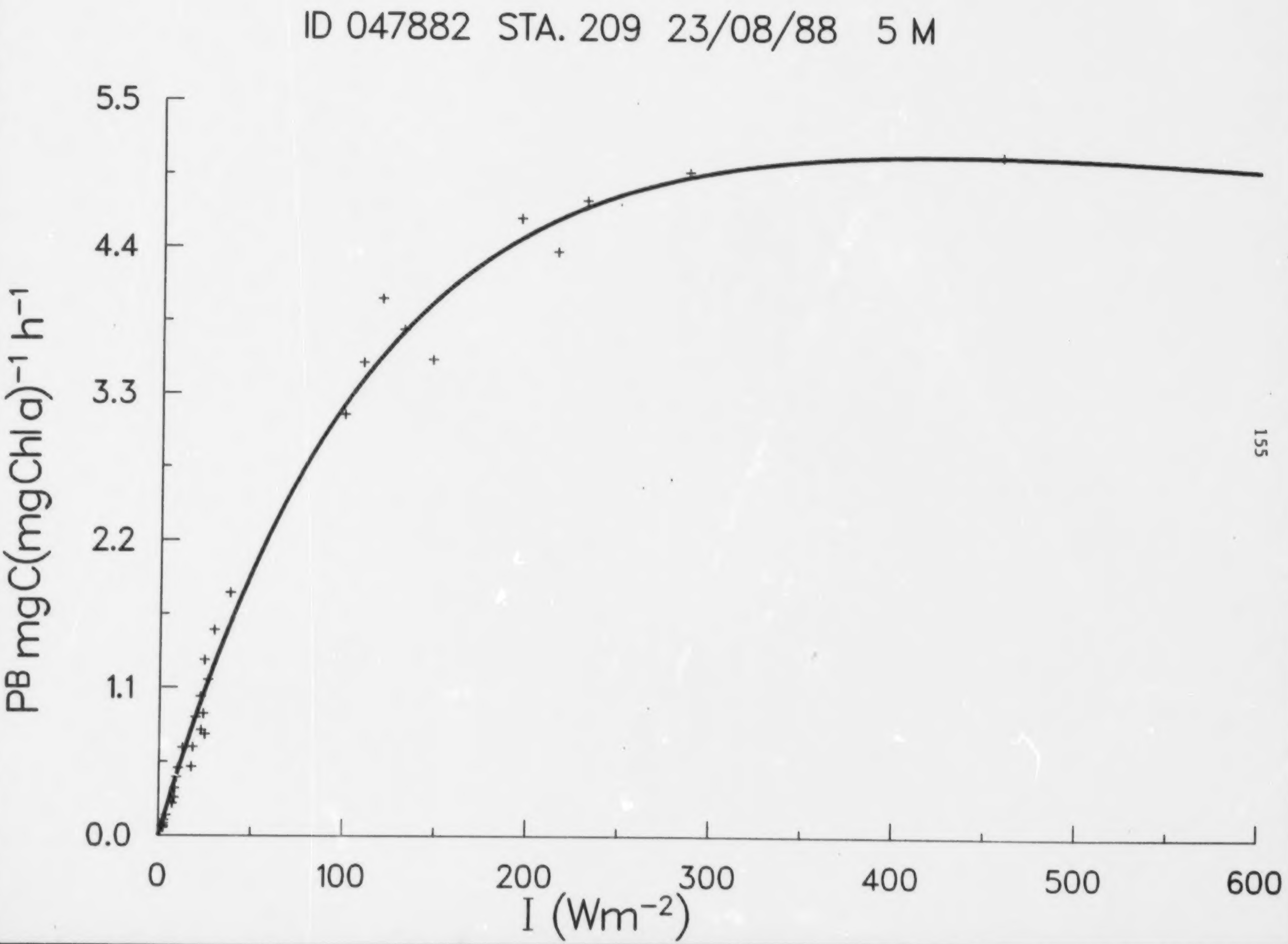

ID 047876 STA. 190 22/08/88 25 M
5.0
4.0
3.0
2.0
1.0
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
I (Wm^{-2})

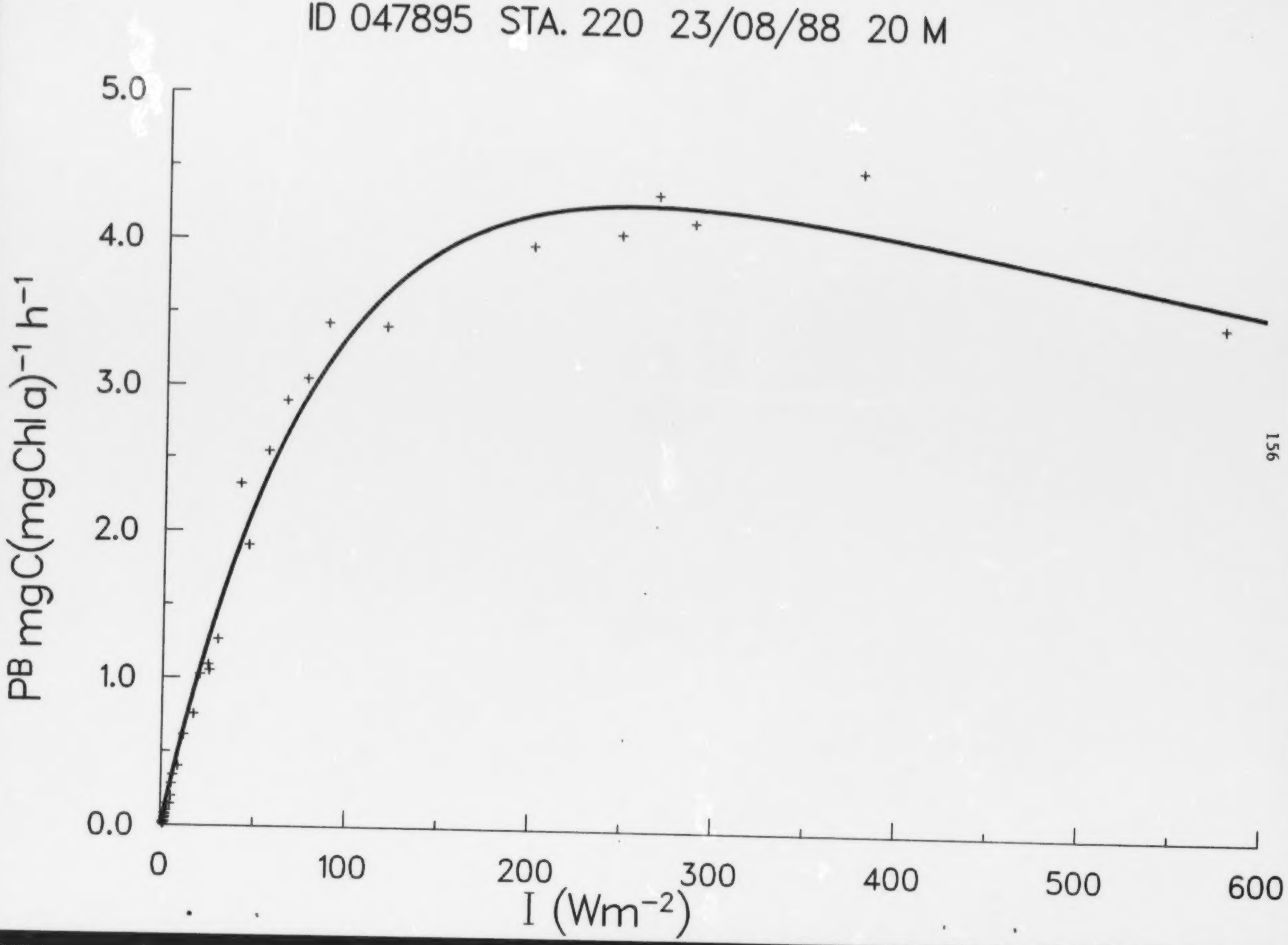

ID 047874 STA. 190 22/08/88 15 M
PB mgC(mgChl a)⁻¹ h⁻¹
0.0
1.0
2.0
3.0
4.0
5.0
0
100
200
300
400
500
600
I (Wm⁻²)


ID 047872 STA. 190 22/08/88 5 M
PB mgC(mgChl a)⁻¹ h⁻¹
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

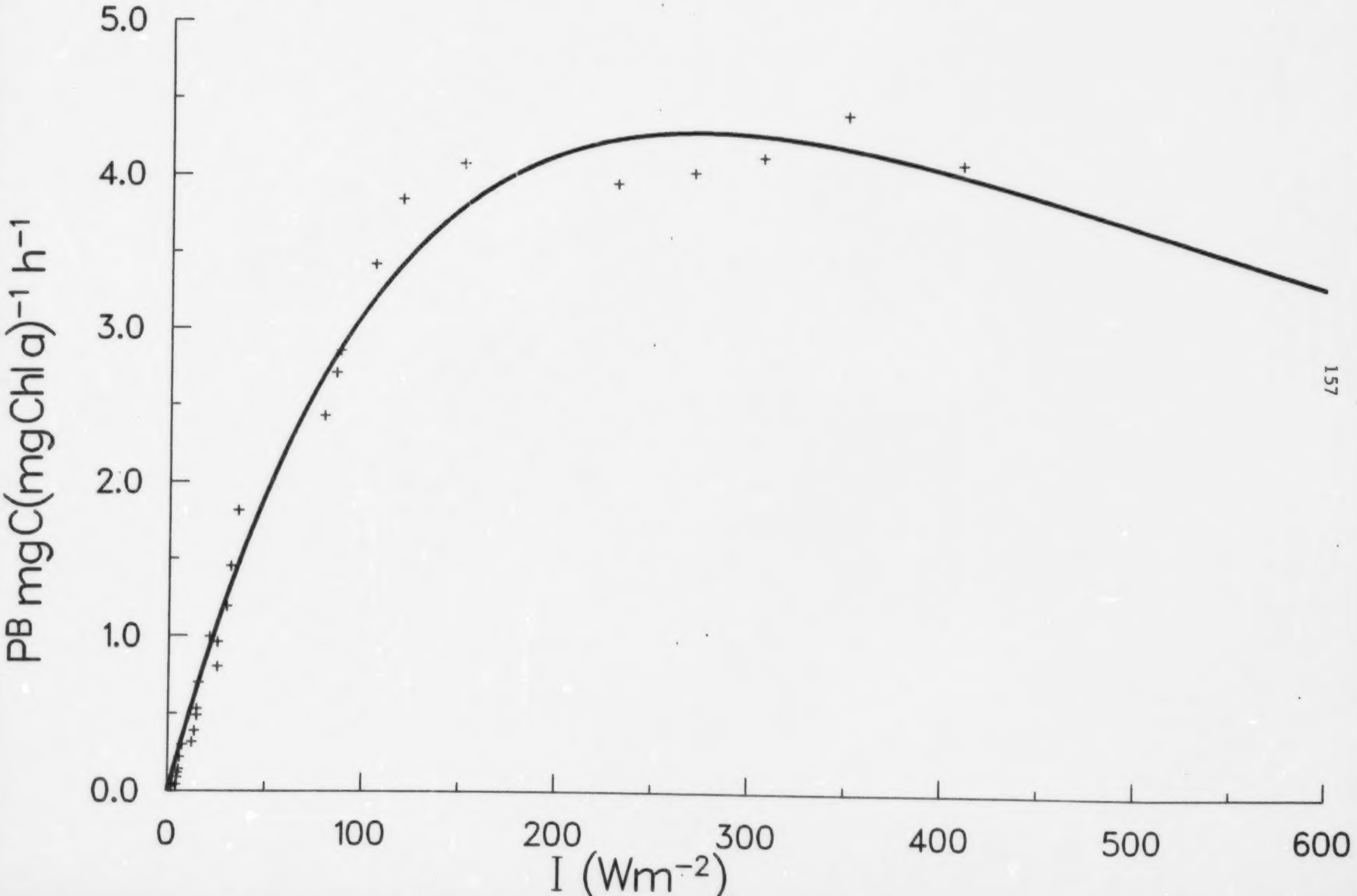

ID 047886 STA. 209 23/08/88 25 M
5.0
4.0
3.0
2.0
1.0
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)

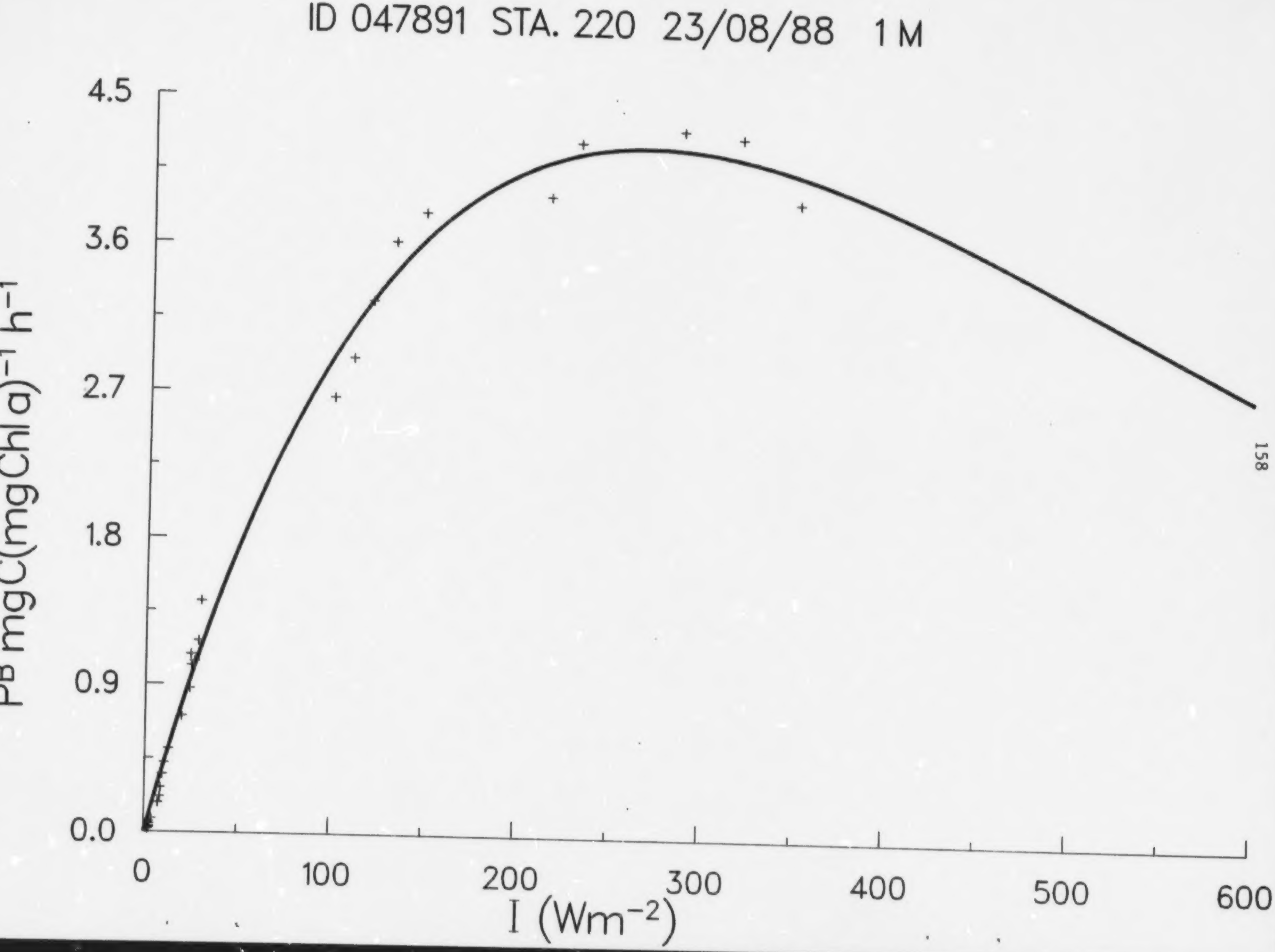

ID 047884 STA. 209 23/08/88 15 M
5.0
4.0
3.0
2.0
1.0
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)
154

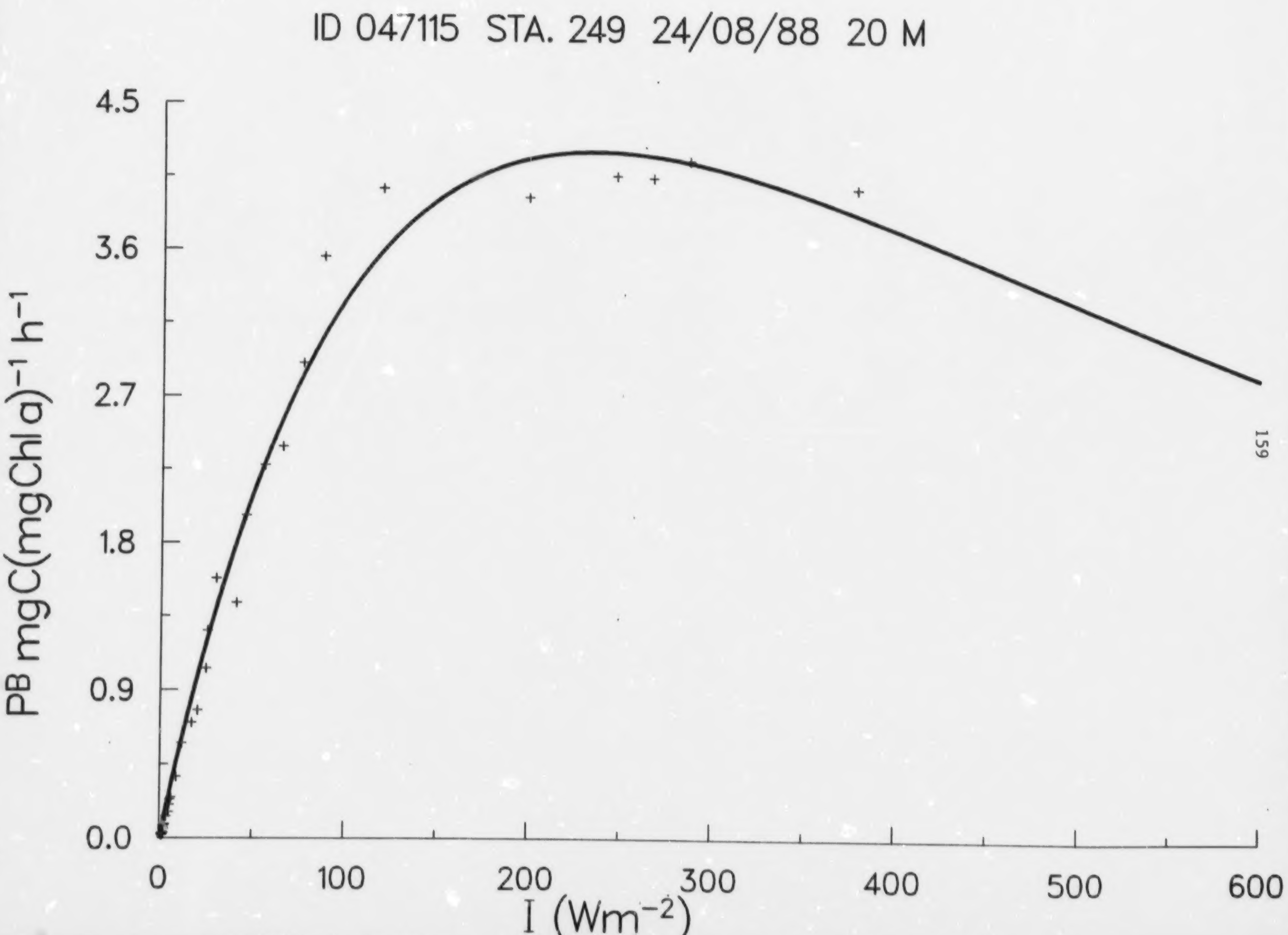

ID 047882 STA. 209 23/08/88 5 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
5.5
4.4
3.3
2.2
1.1
0.0
0
100
200
300
400
500
600
I (Wm^{-2})

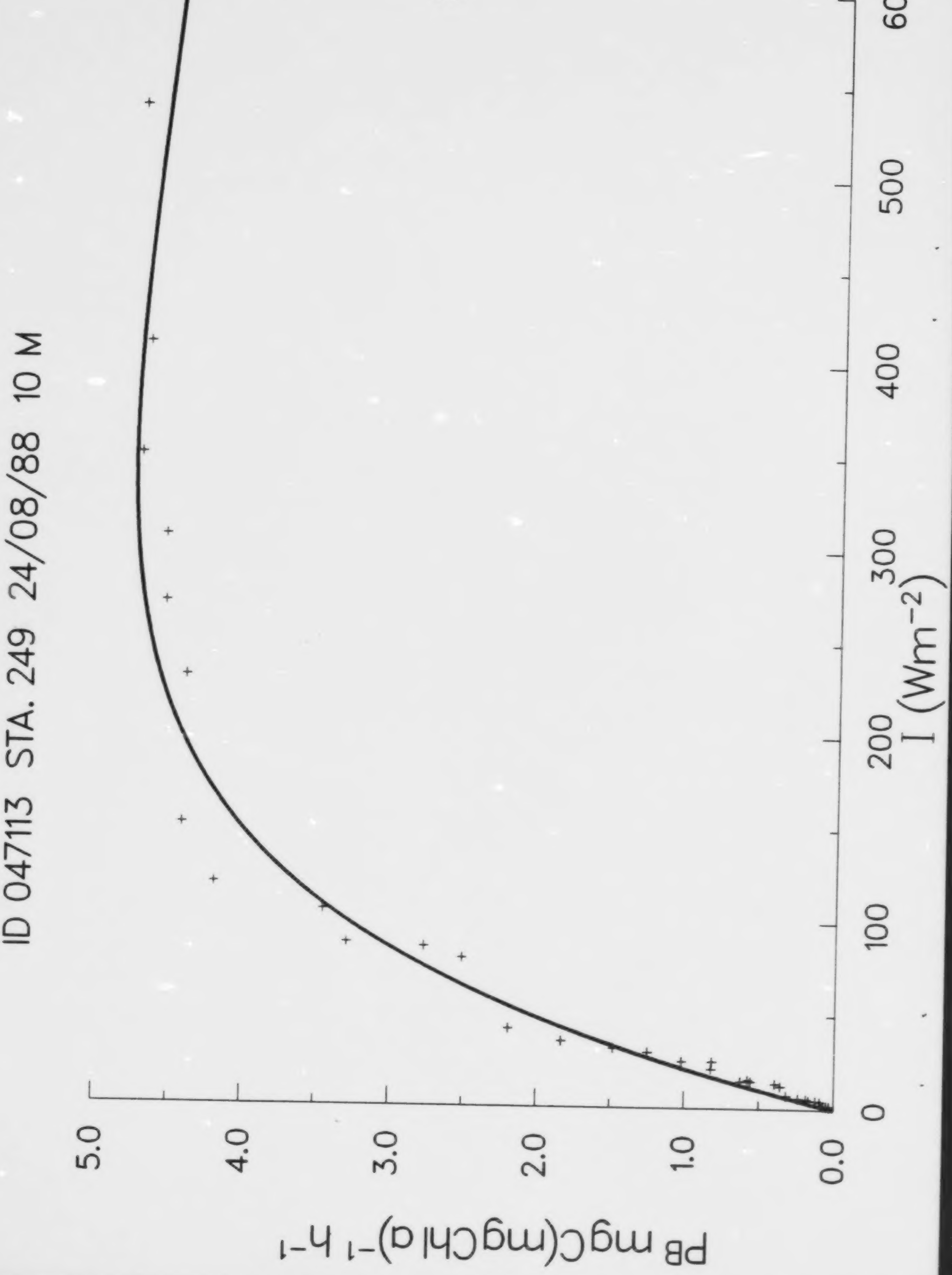

ID 047895 STA. 220 23/08/88 20 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
0.0
1.0
2.0
3.0
4.0
5.0
0
100
200
300
400
500
600
I (Wm^{-2})

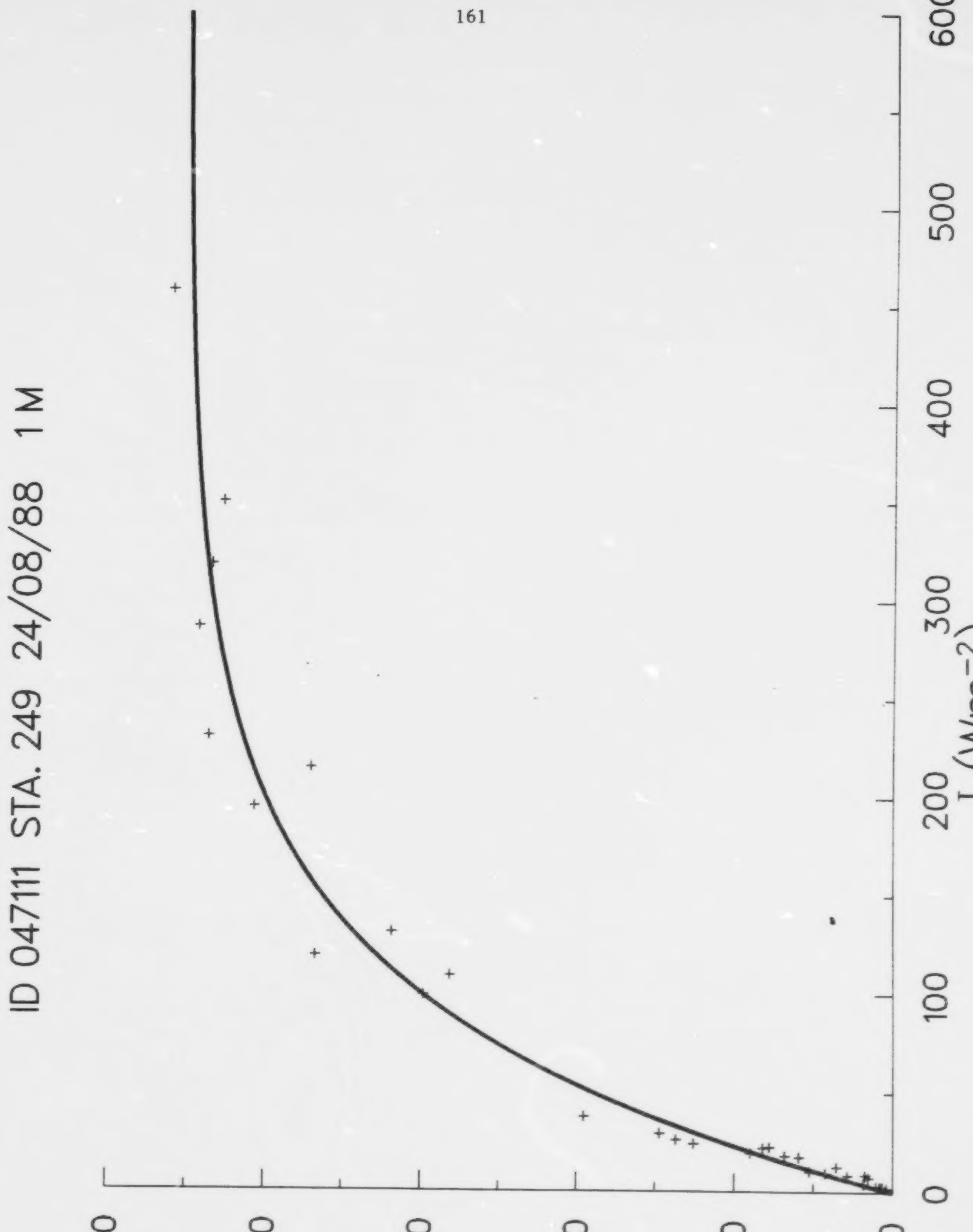
ID 047893 STA. 220 23/08/88 10 M

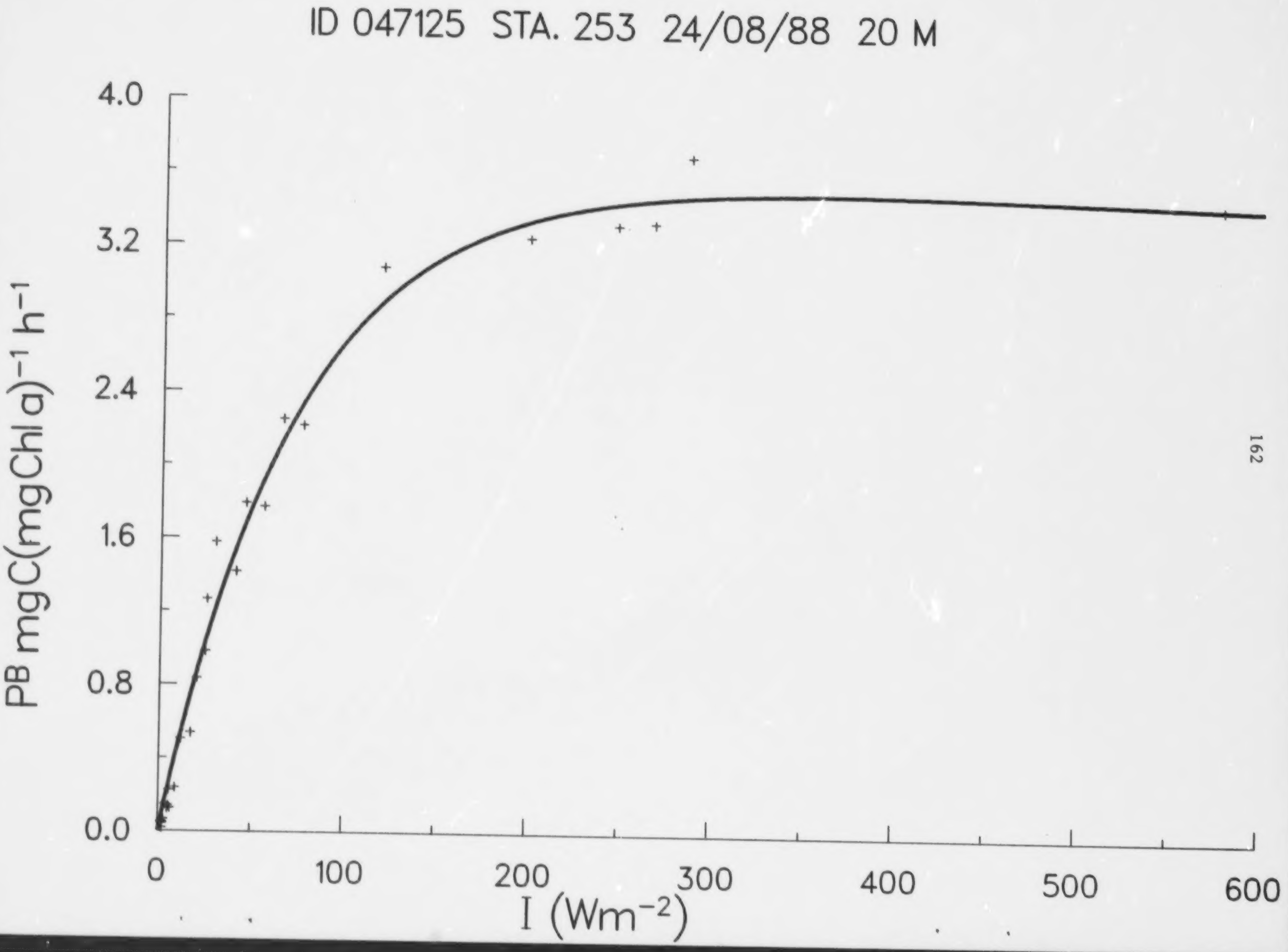


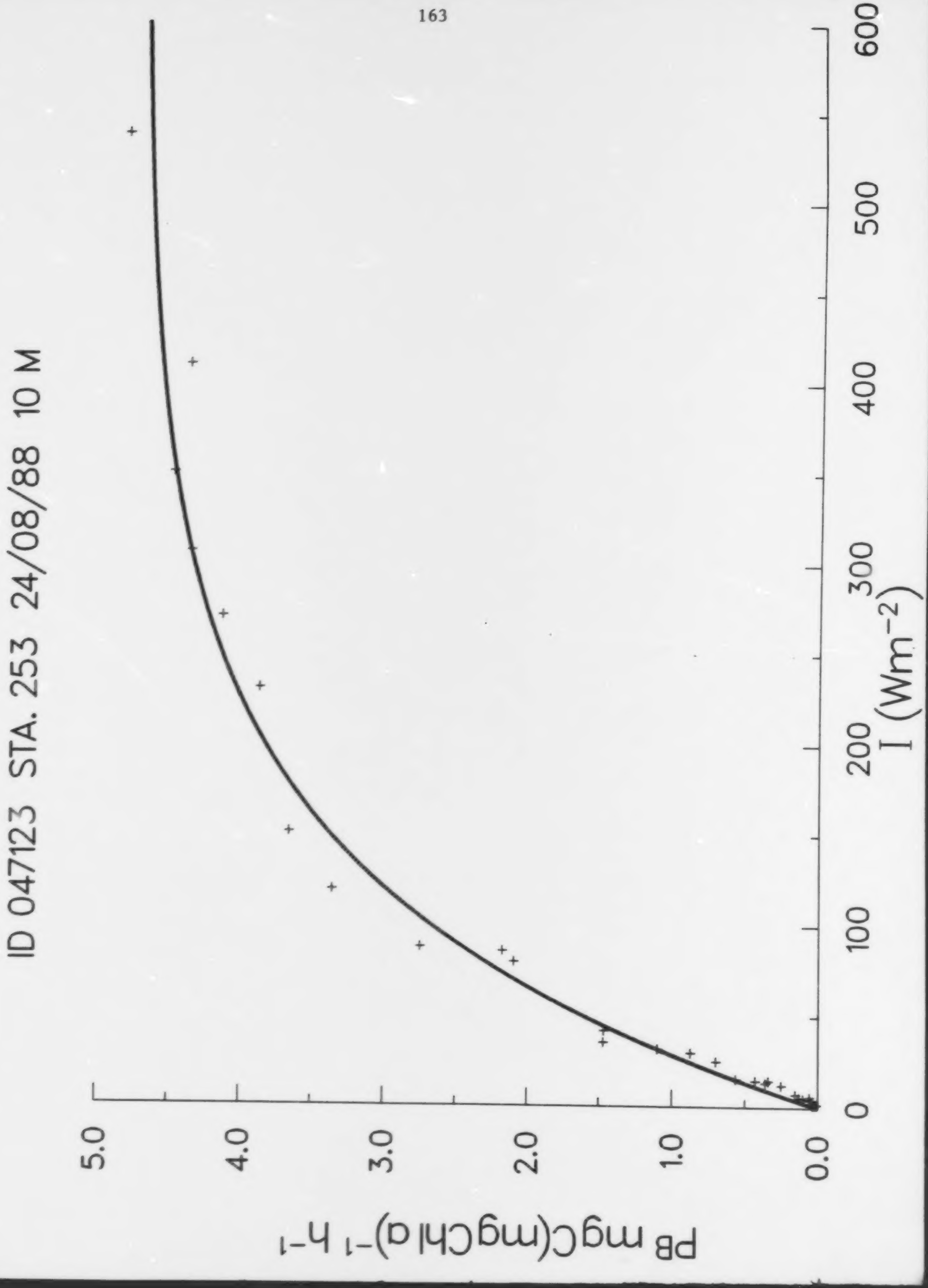

ID 047891 STA. 220 23/08/88 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm^{-2})

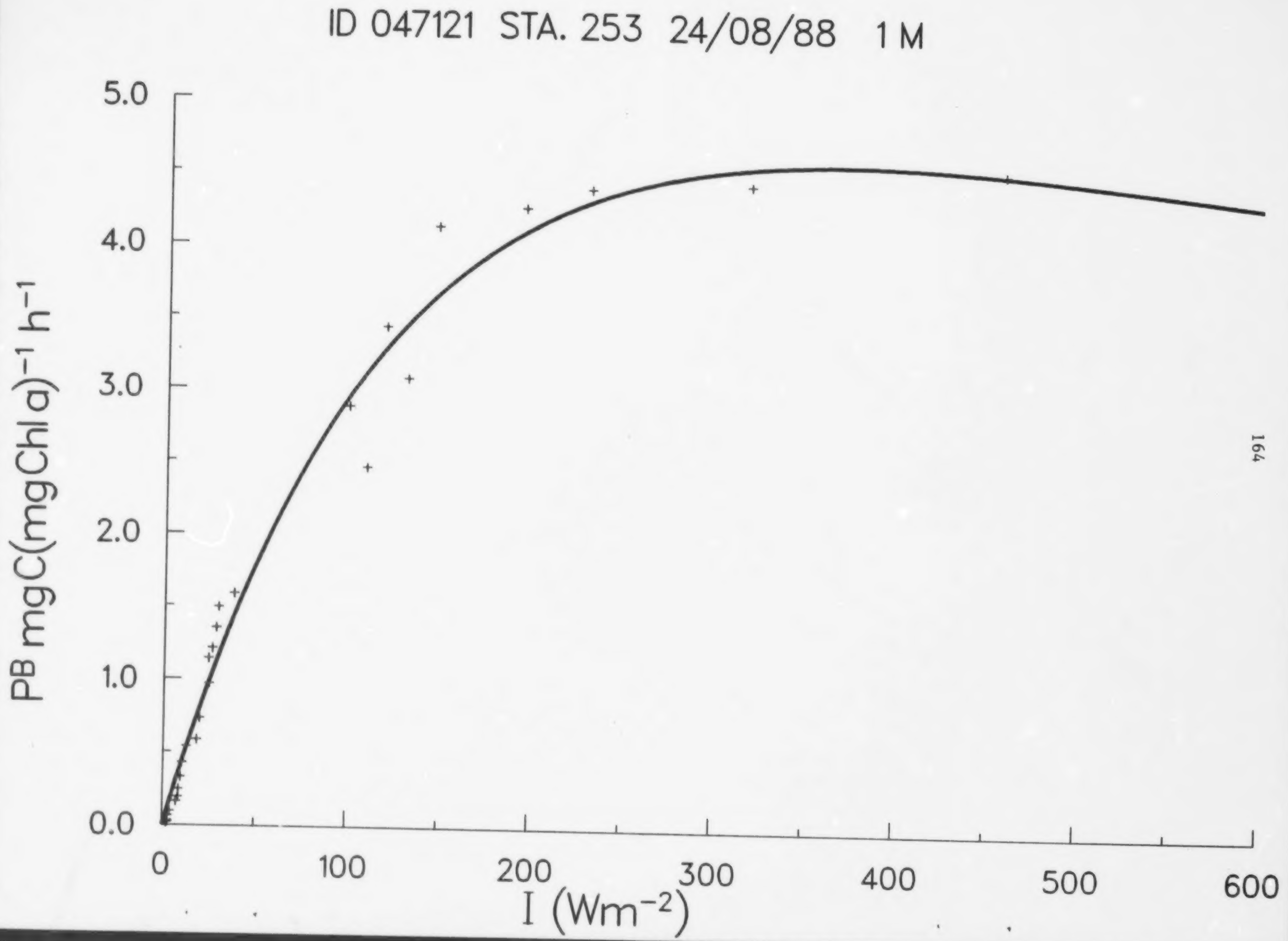

ID 047115 STA. 249 24/08/88 20 M
PB mgC(mgChl a)⁻¹ h⁻¹
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

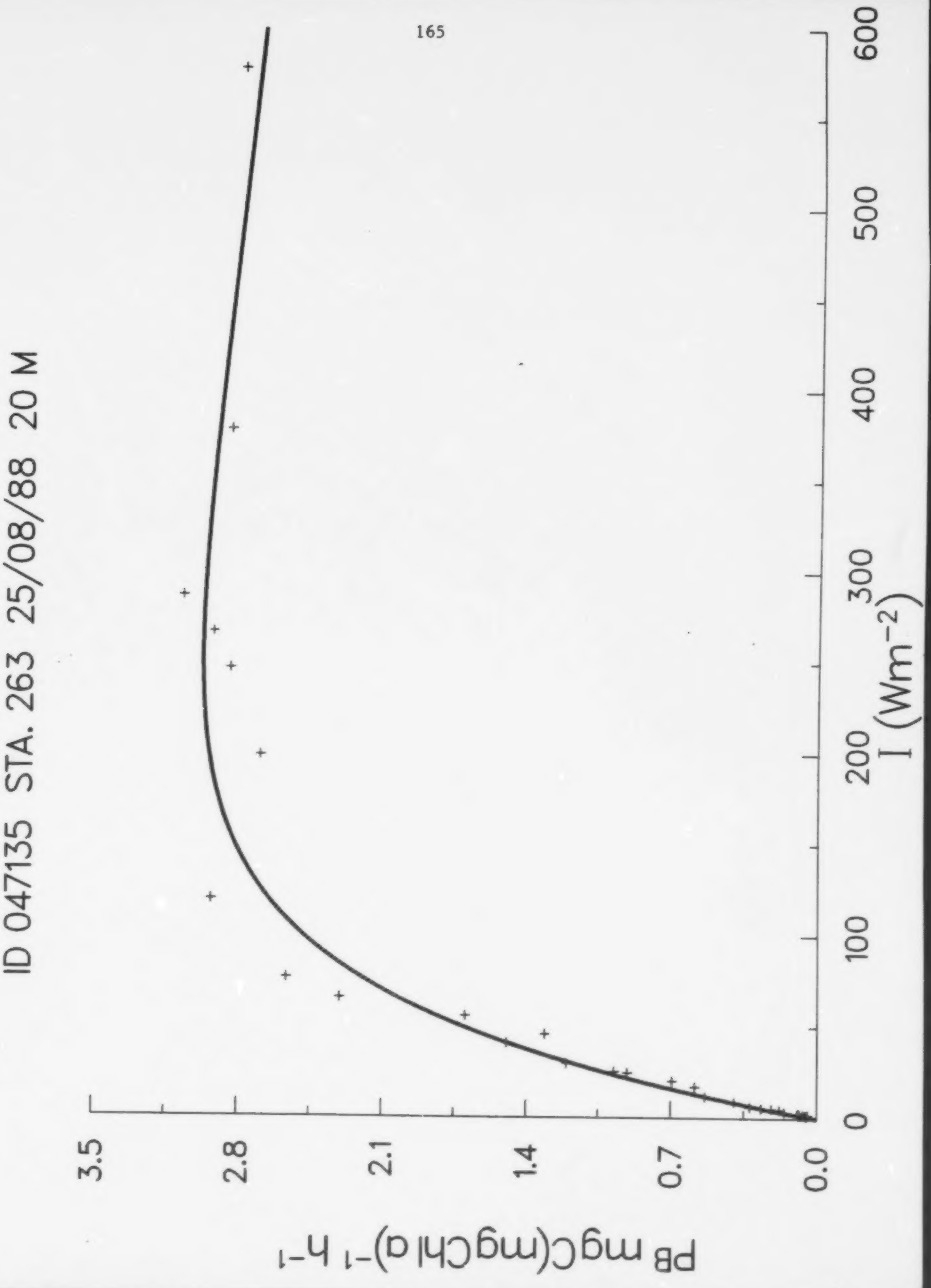

ID 047113 STA. 249 24/08/88 10 M
PB mgC(mgChl a)⁻¹ h⁻¹
0.0
1.0
2.0
3.0
4.0
5.0
I (Wm⁻²)
0
100
200
300
400
500
600

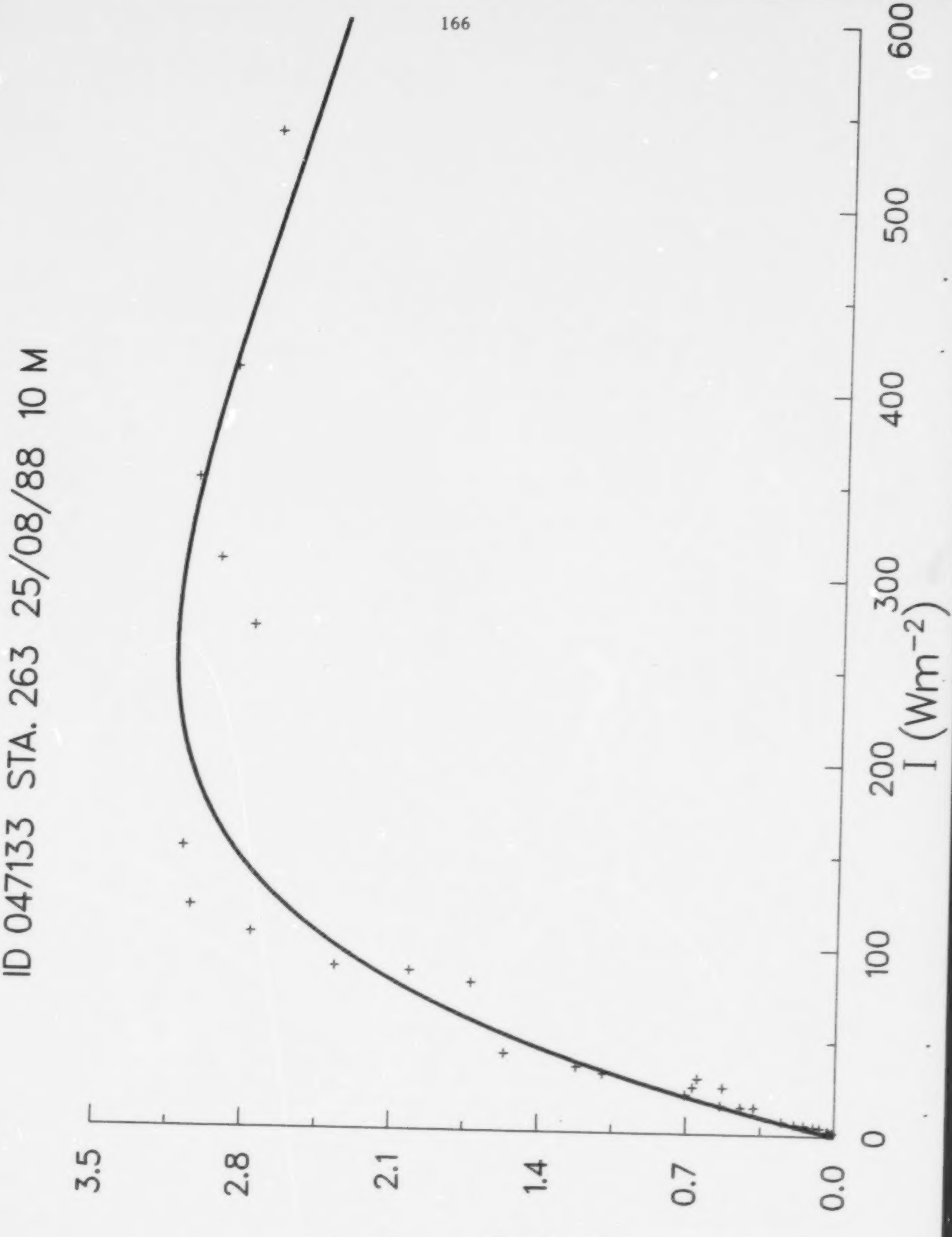

ID 047111 STA. 249 24/08/88 1 M
PB mgC(mgChl a)-1 h-1
I (Wm-2)
0.0
1.0
2.0
3.0
4.0
5.0
0
100
200
300
400
500
600

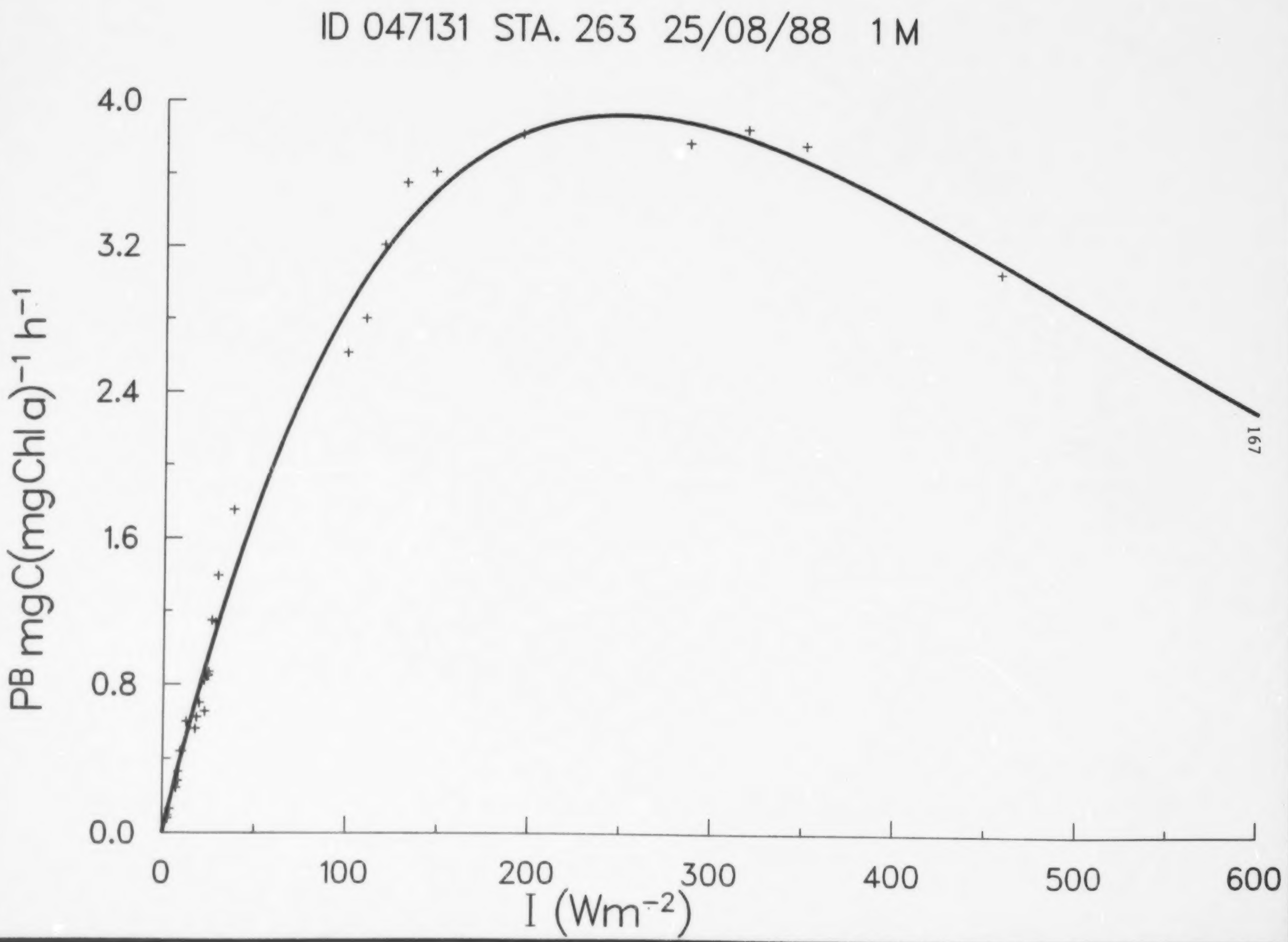

ID 047125 STA. 253 24/08/88 20 M
4.0
3.2
2.4
1.6
0.8
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)

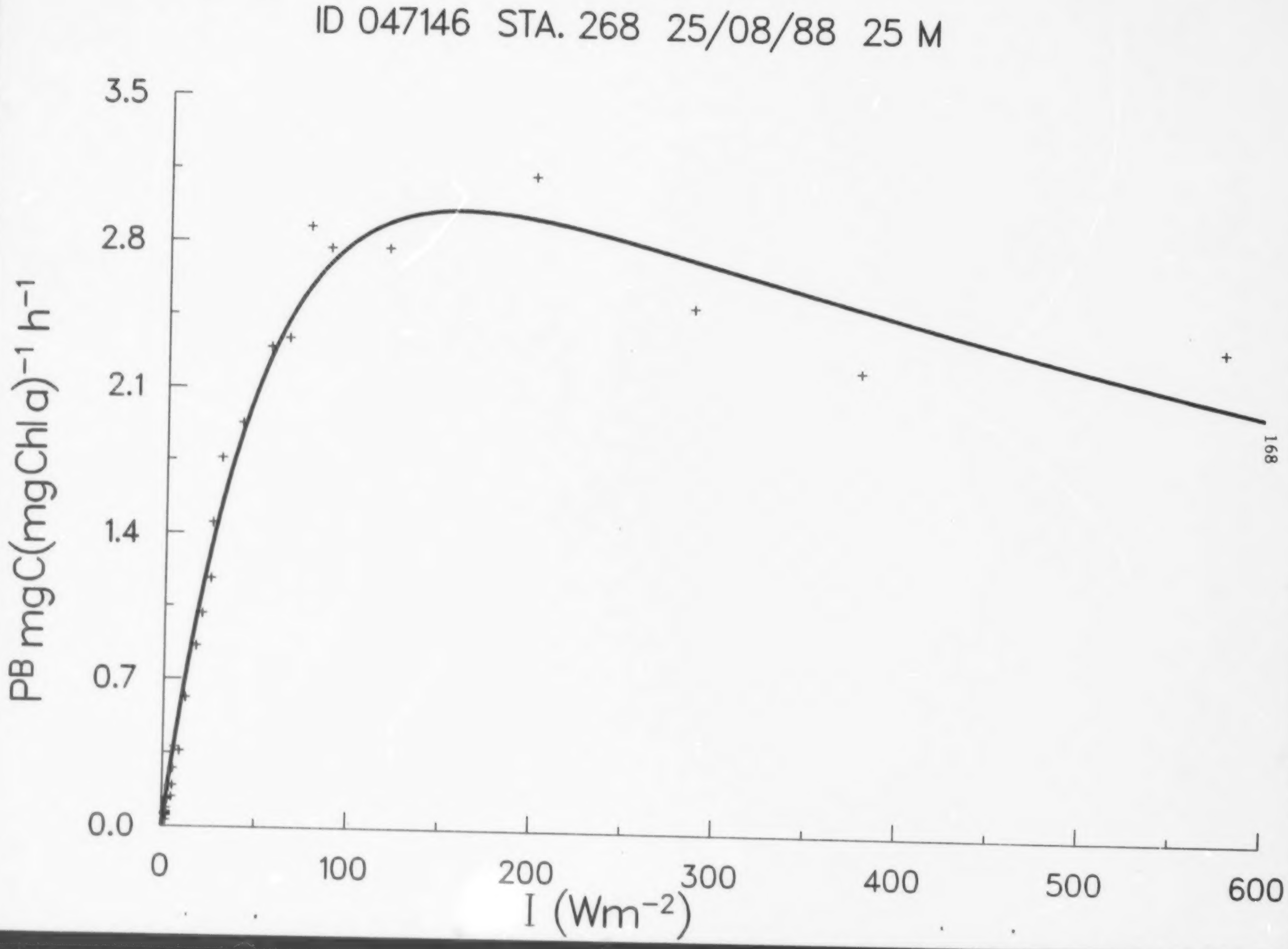

ID 047123 STA. 253 24/08/88 10 M
PB mgC(mgChl a)-1 h-1
0.0
1.0
2.0
3.0
4.0
5.0
0
100
200
300
400
500
600
I (Wm-2)

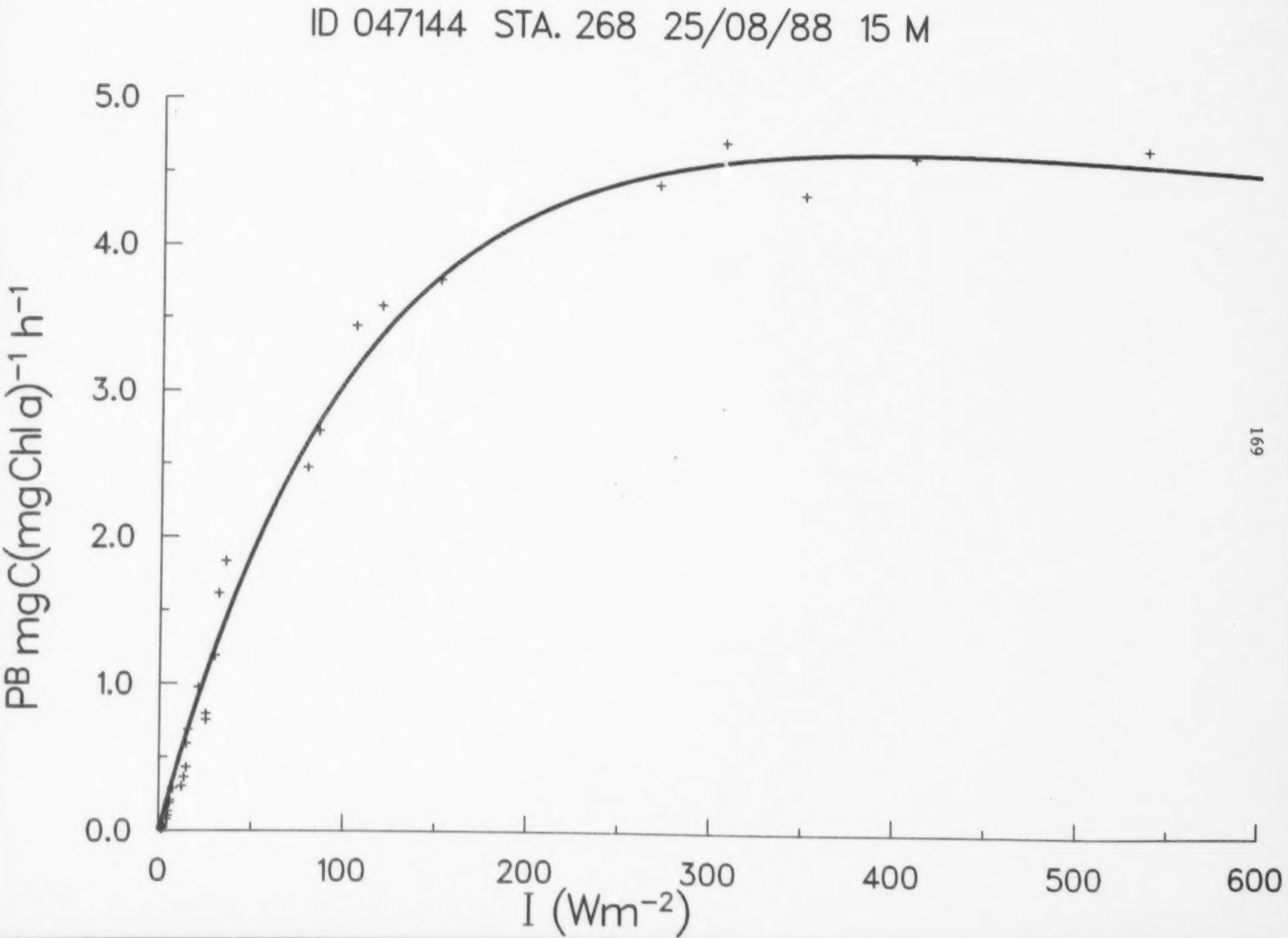

ID 047121 STA. 253 24/08/88 1 M
PB mgC(mgChl a)-1 h-1
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
I (Wm-2)

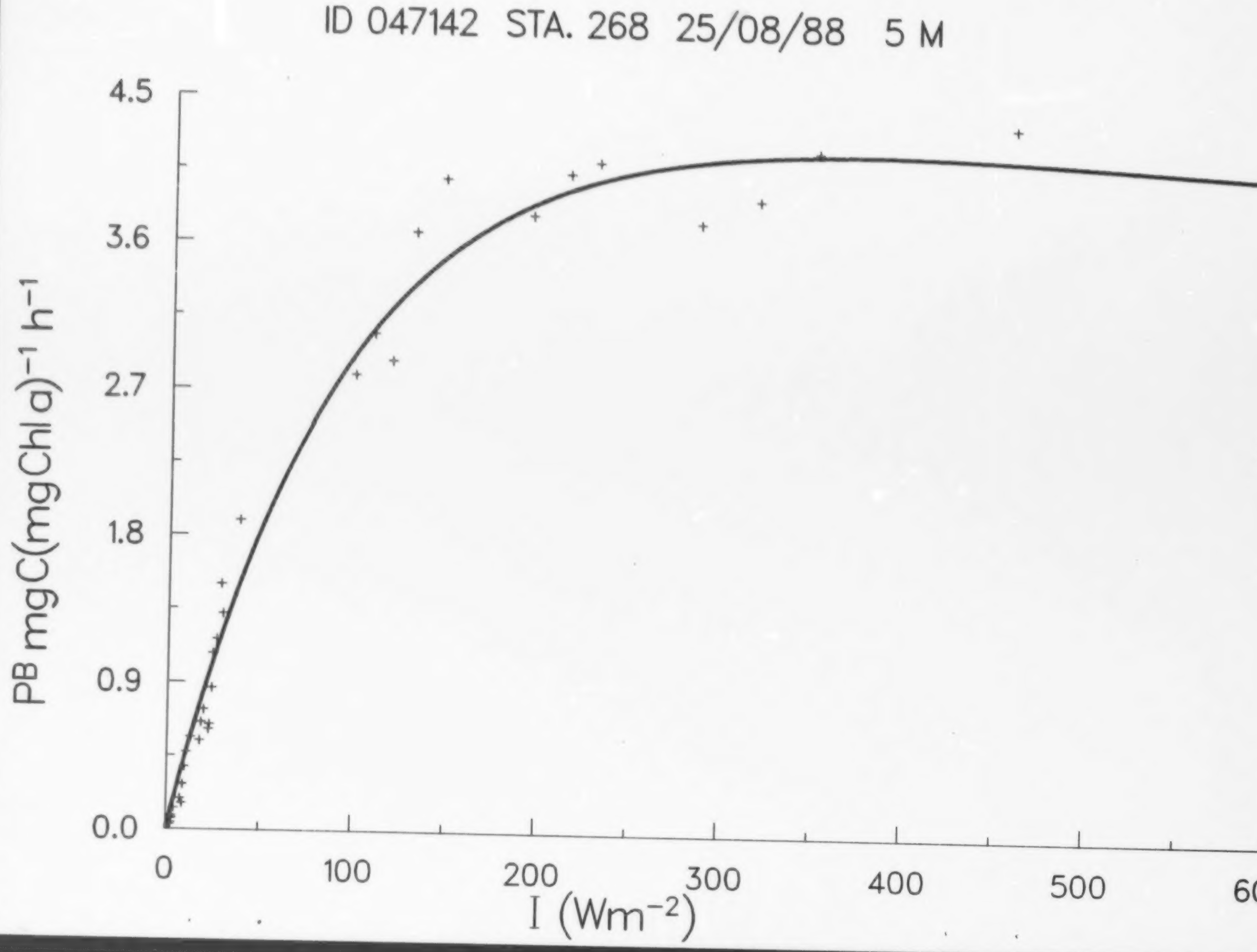

ID 047135 STA. 263 25/08/88 20 M
PB mgC(mgChl a)-1 h-1
0.0
0.7
1.4
2.1
2.8
3.5
0
100
200
300
400
500
600
I (Wm-2)

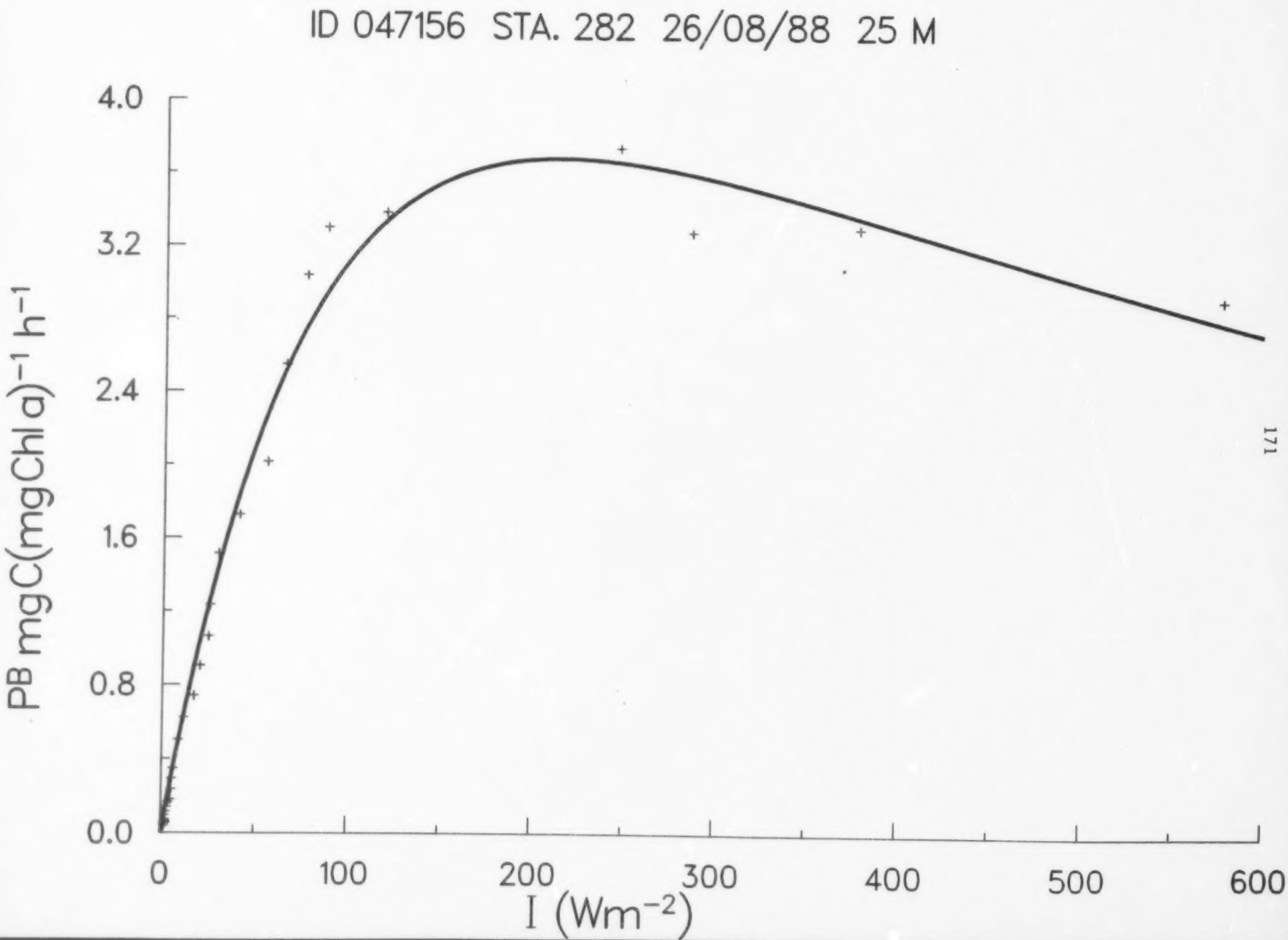

ID 047133 STA. 263 25/08/88 10 M
PB mgC(mgChl a)⁻¹ h⁻¹
3.5
2.8
2.1
1.4
0.7
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

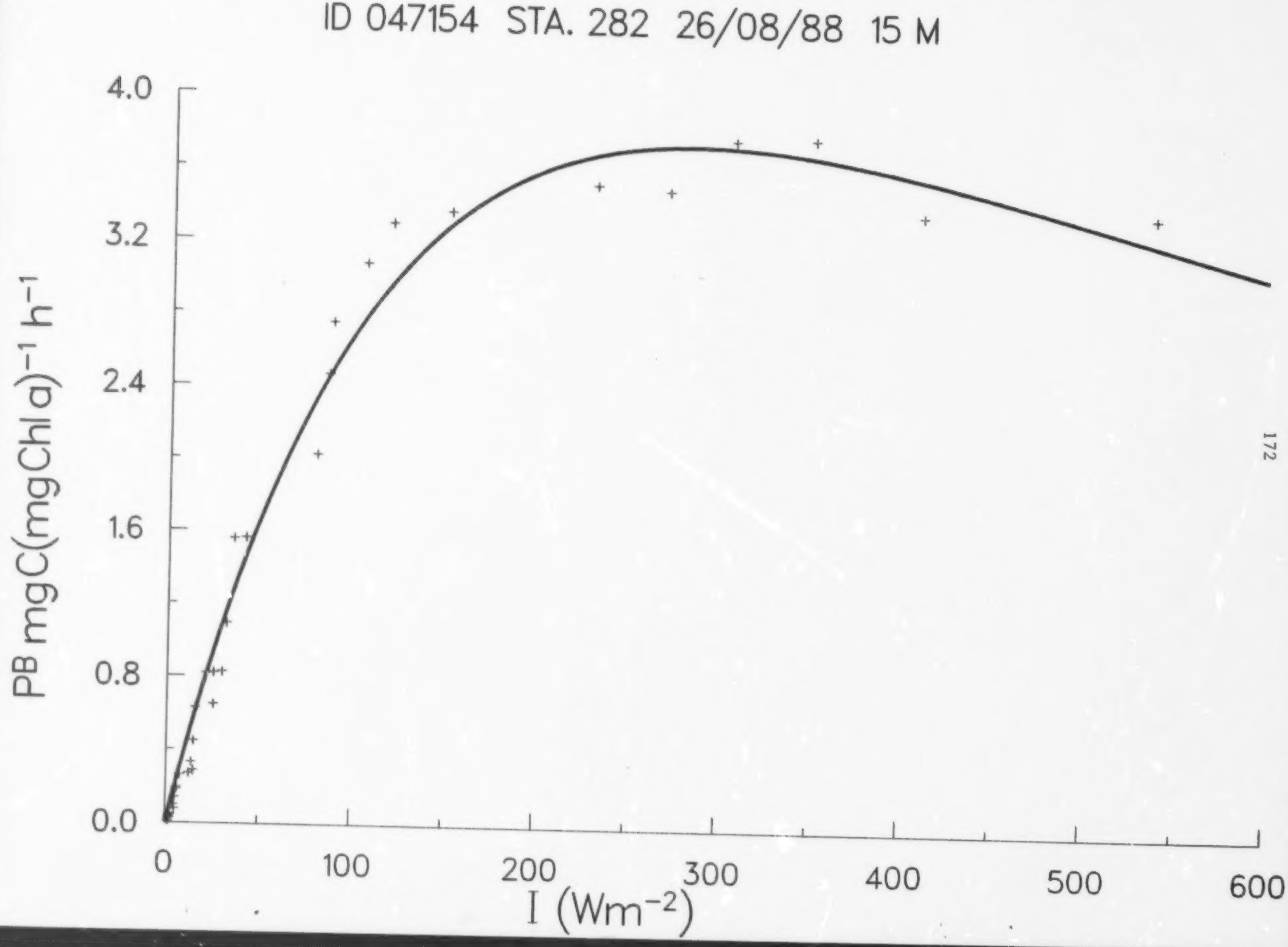

ID 047131 STA. 263 25/08/88 1 M
PB mgC(mgChl a)⁻¹ h⁻¹
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
I (Wm⁻²)


ID 047146 STA. 268 25/08/88 25 M
3.5
2.8
2.1
1.4
0.7
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)
168

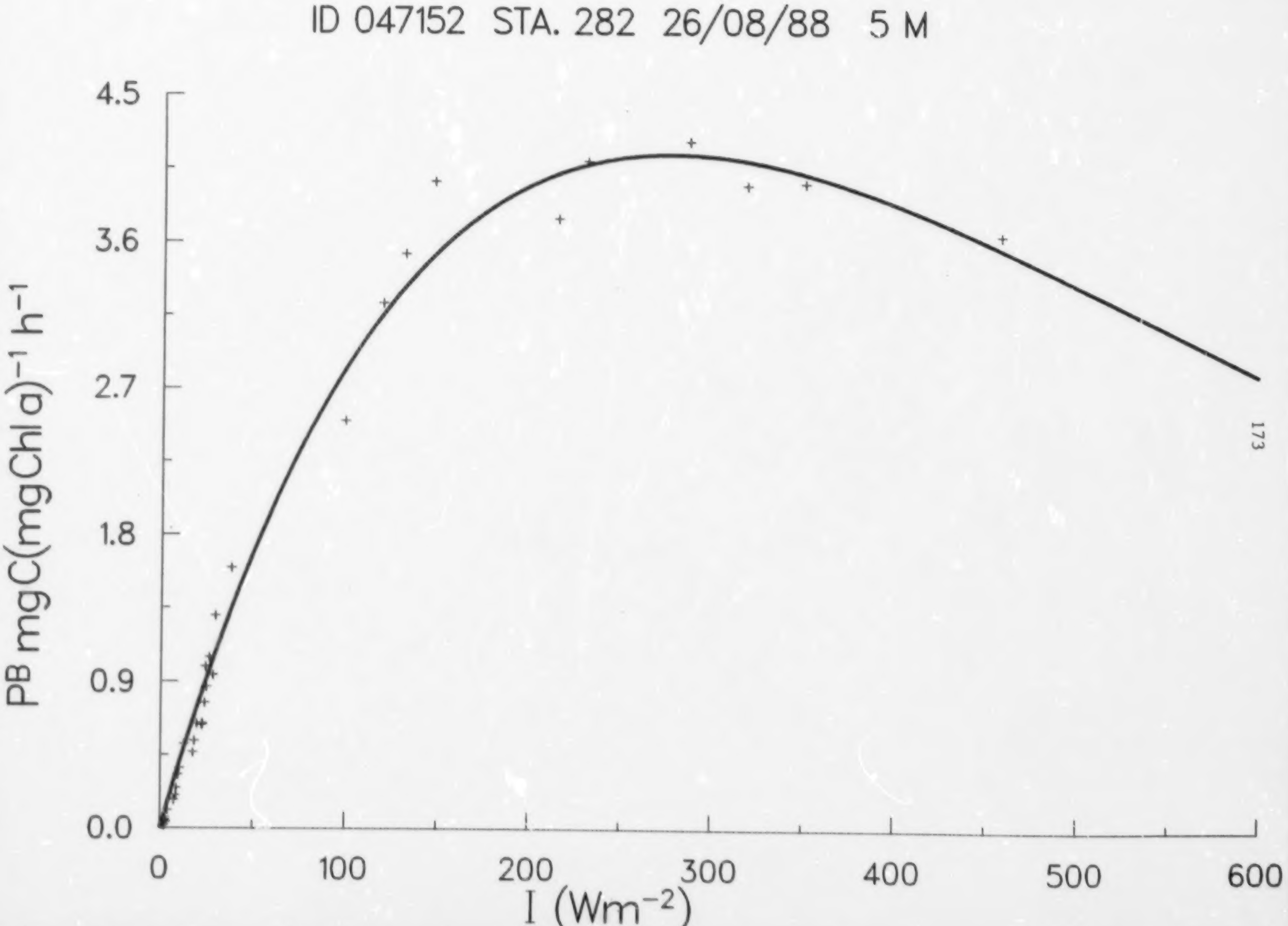

ID 047144 STA. 268 25/08/88 15 M
PB mgC(mgChl a)-1 h-1
0.0
1.0
2.0
3.0
4.0
5.0
0
100
200
300
400
500
600
I (Wm-2)


ID 047142 STA. 268 25/08/88 5 M
PB mgC(mgChl a)-1 h-1
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm-2)

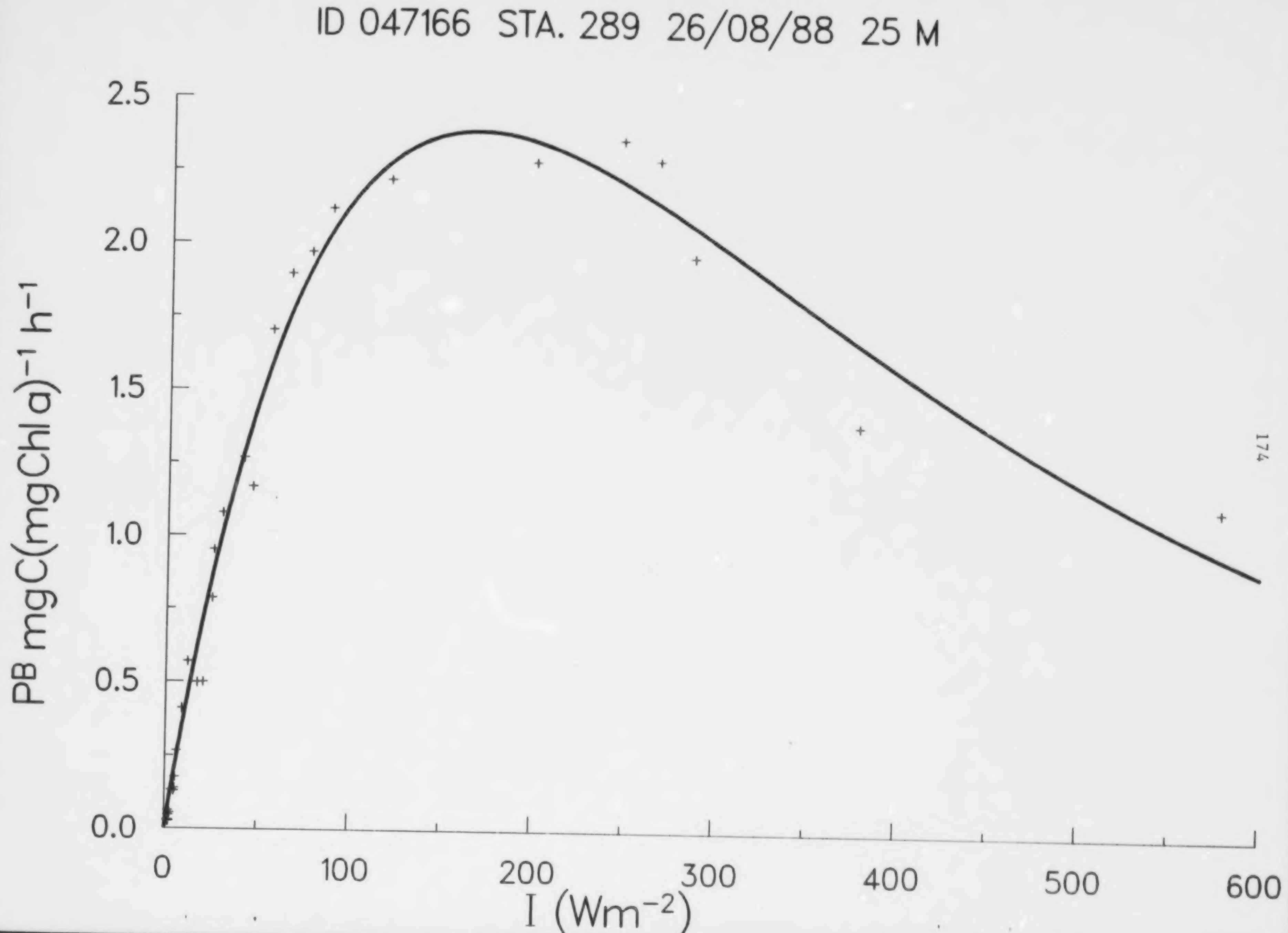

ID 047156 STA. 282 26/08/88 25 M
4.0
3.2
2.4
1.6
0.8
0.0
PB mgC(mgChl a)⁻¹ h⁻¹
0
100
200
300
400
500
600
I (Wm⁻²)

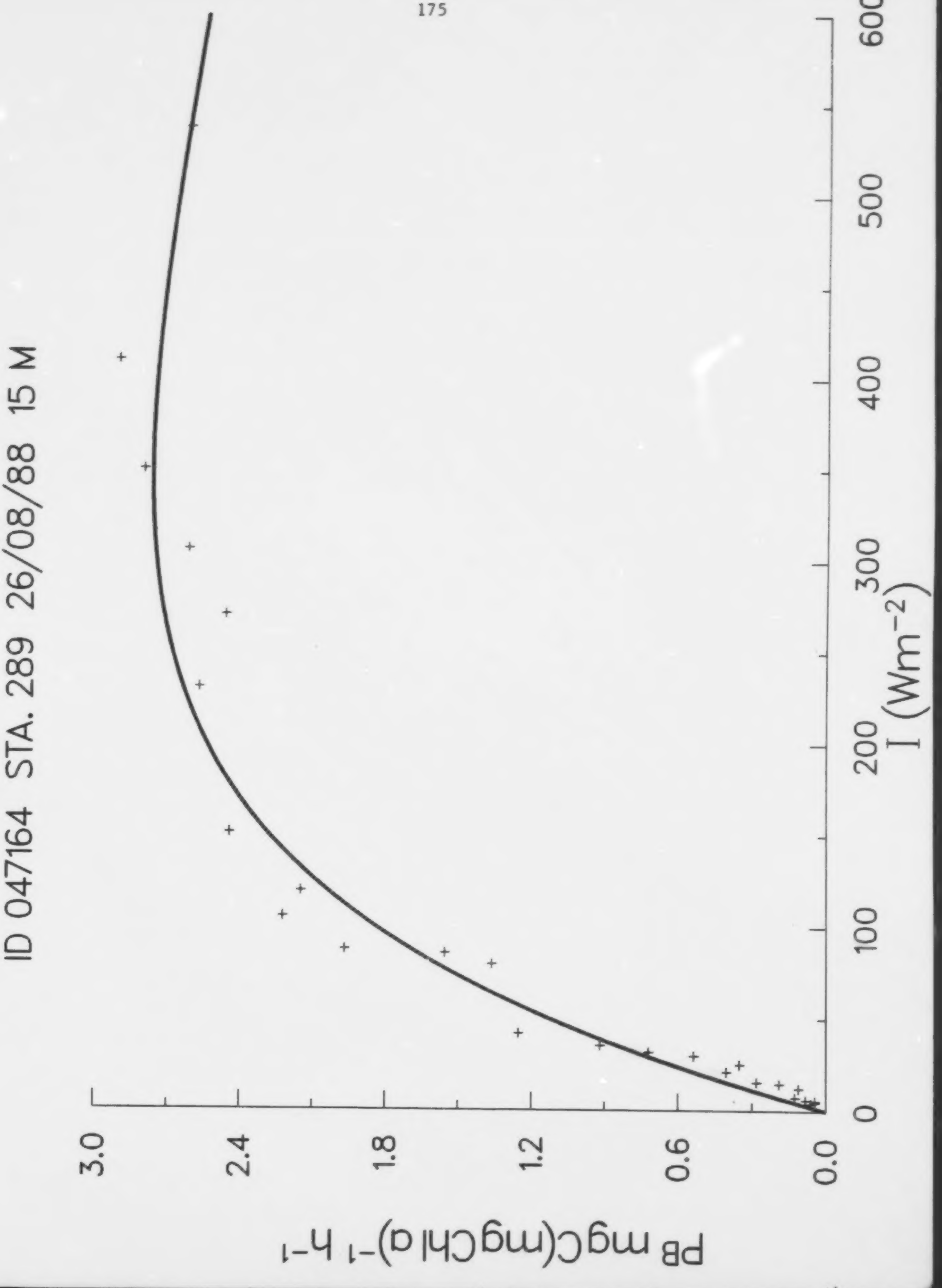


ID 047154 STA. 282 26/08/88 15 M
PB mgC(mgChl a)−1 h−1
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
I (Wm−2)

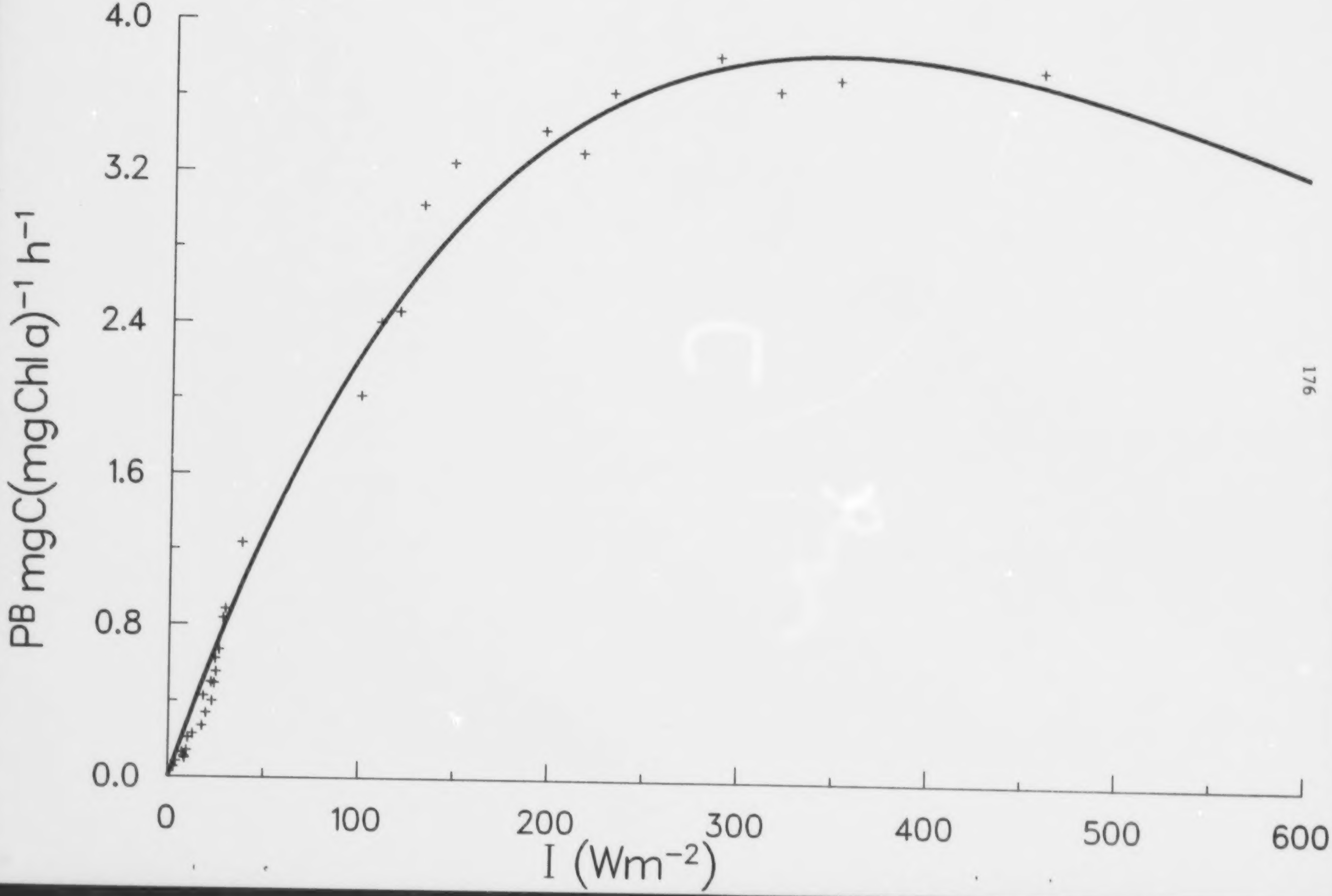


ID 047152 STA. 282 26/08/88 5 M
PB mgC(mgChl a)⁻¹ h⁻¹
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

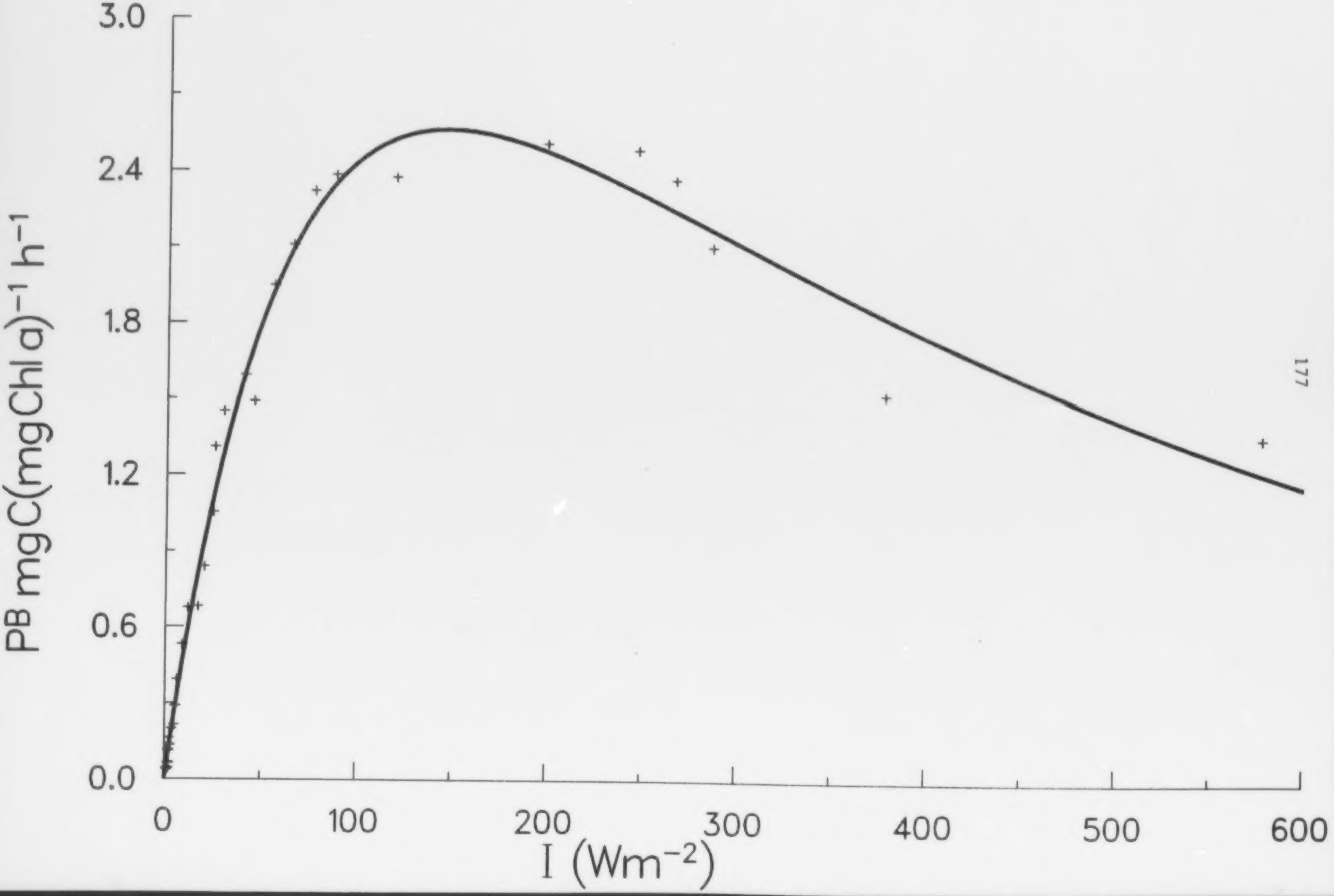

ID 047166 STA. 289 26/08/88 25 M
PB mgC(mgChl a)⁻¹ h⁻¹
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

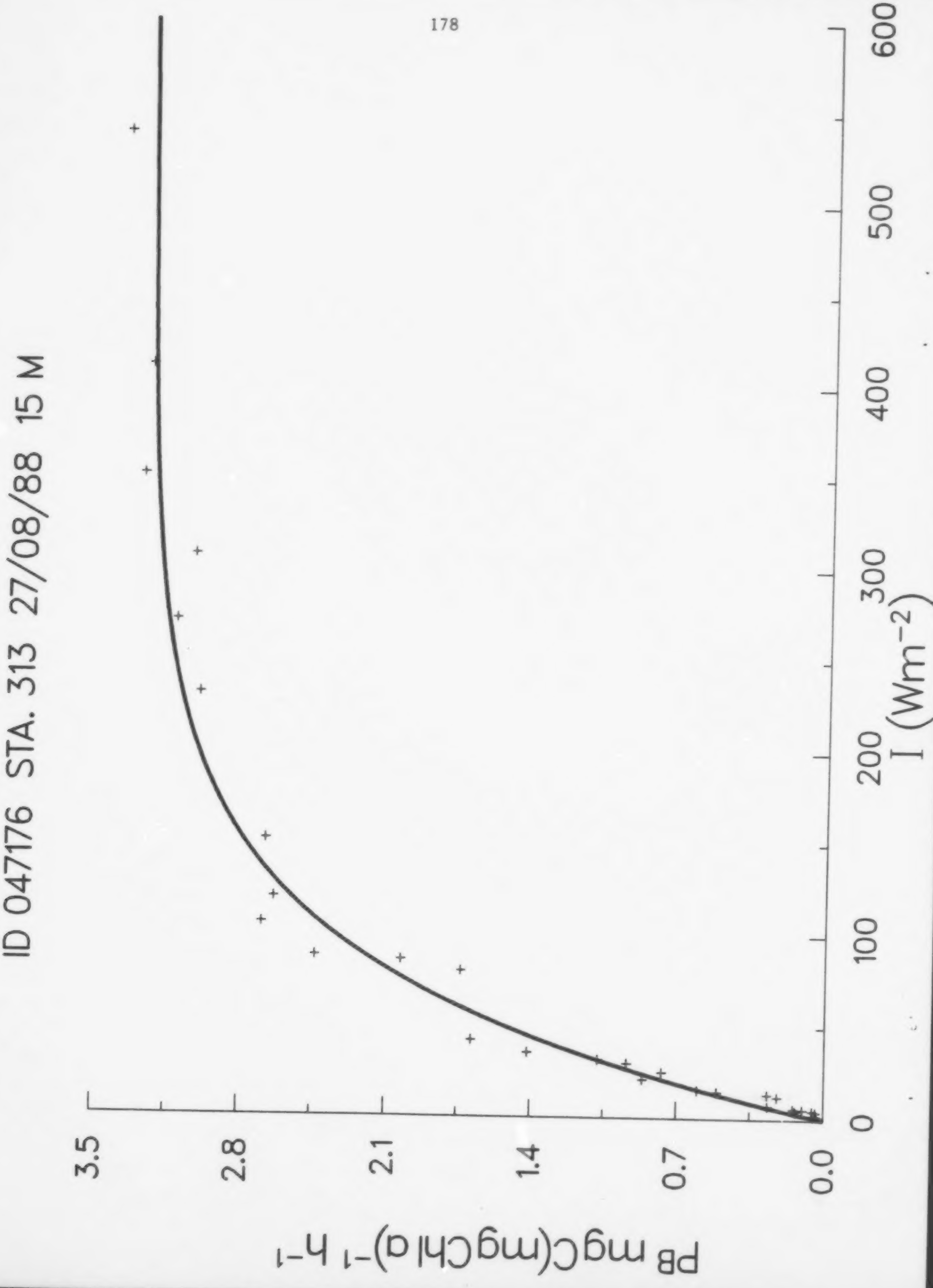

ID 047164 STA. 289 26/08/88 15 M
PB mgC(mgChl a)⁻¹ h⁻¹
I (Wm⁻²)
0.0
0.6
1.2
1.8
2.4
3.0
0
100
200
300
400
500
600

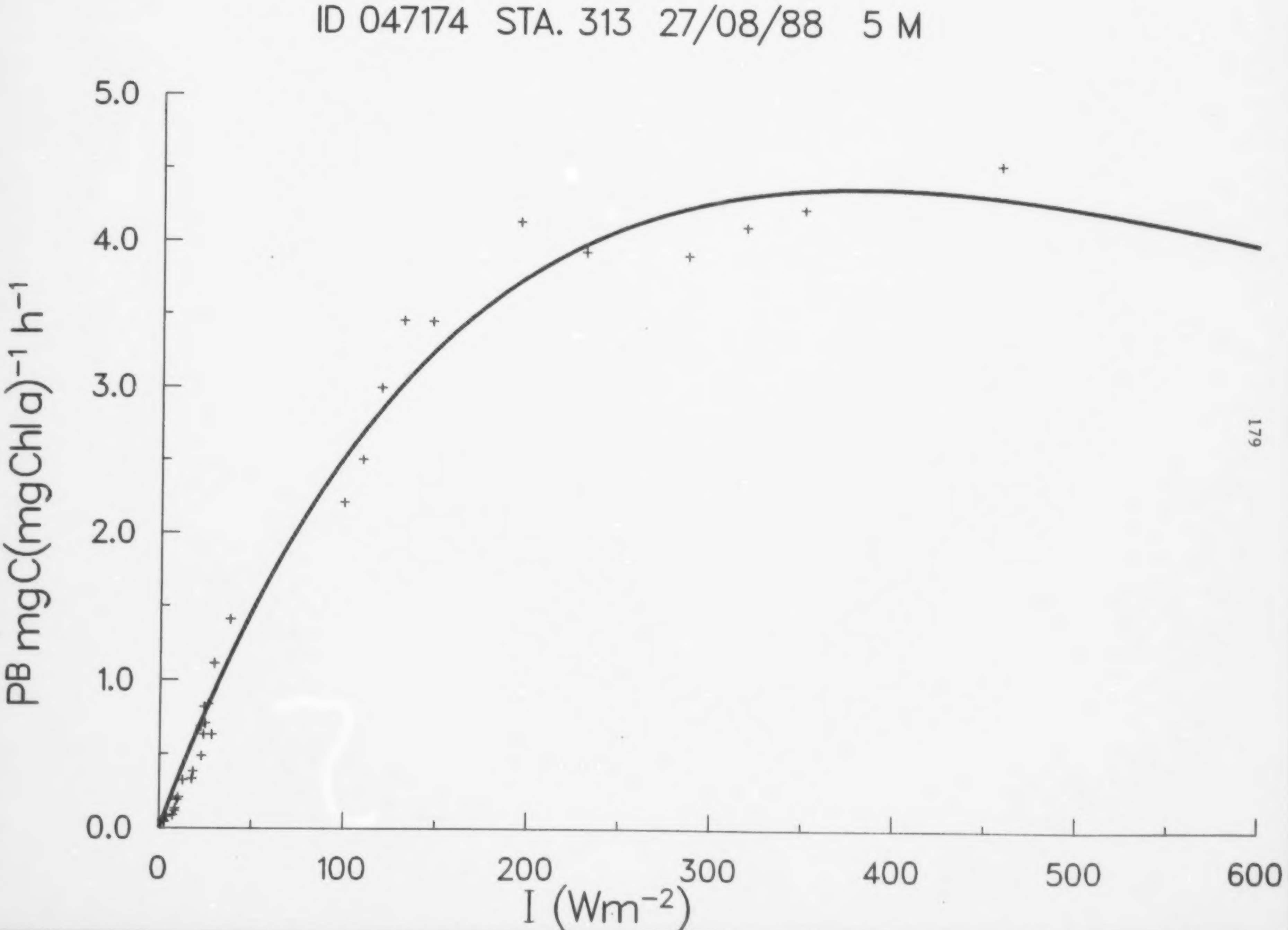
ID 047162 STA. 289 26/08/88 5 M

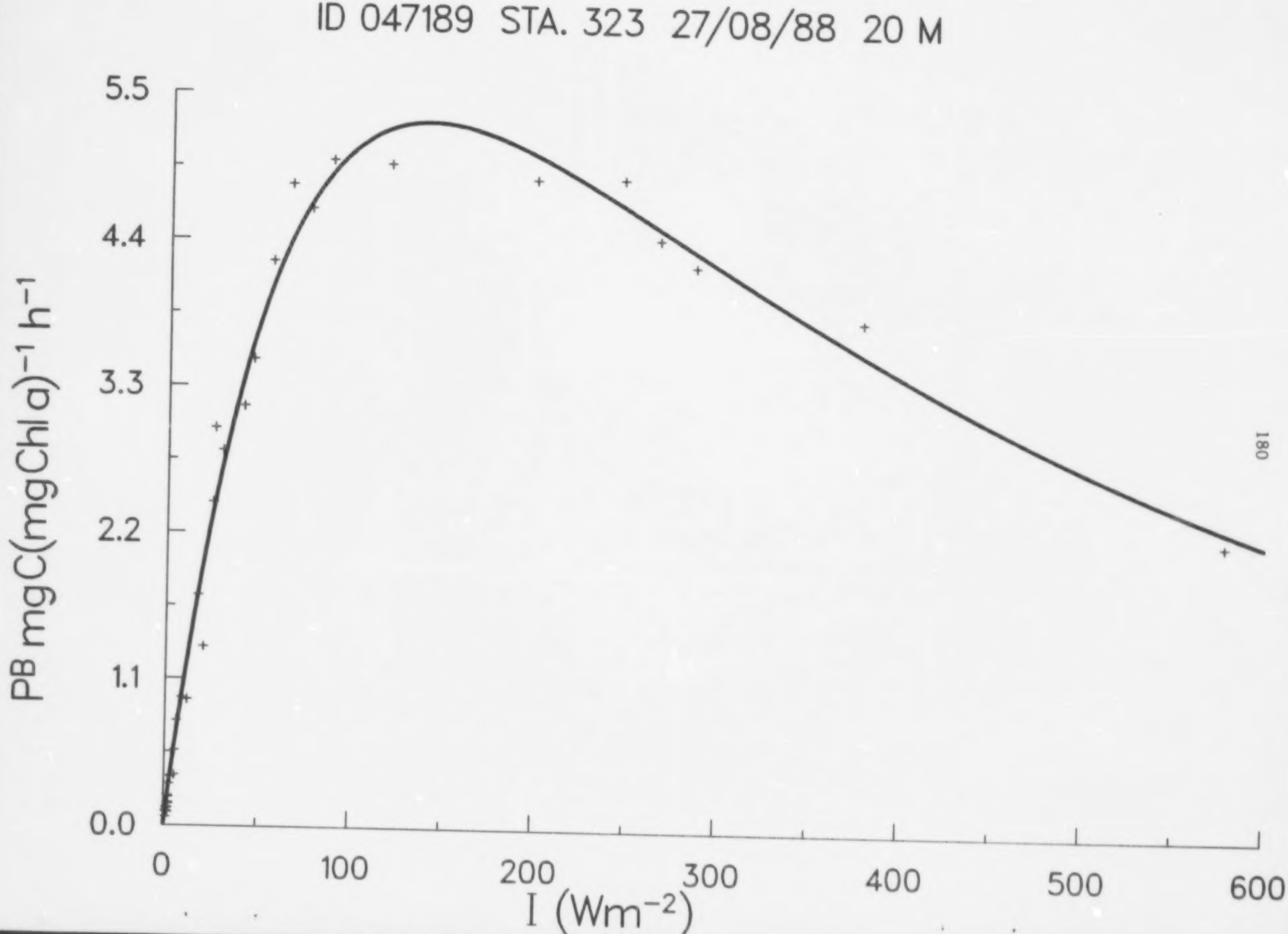


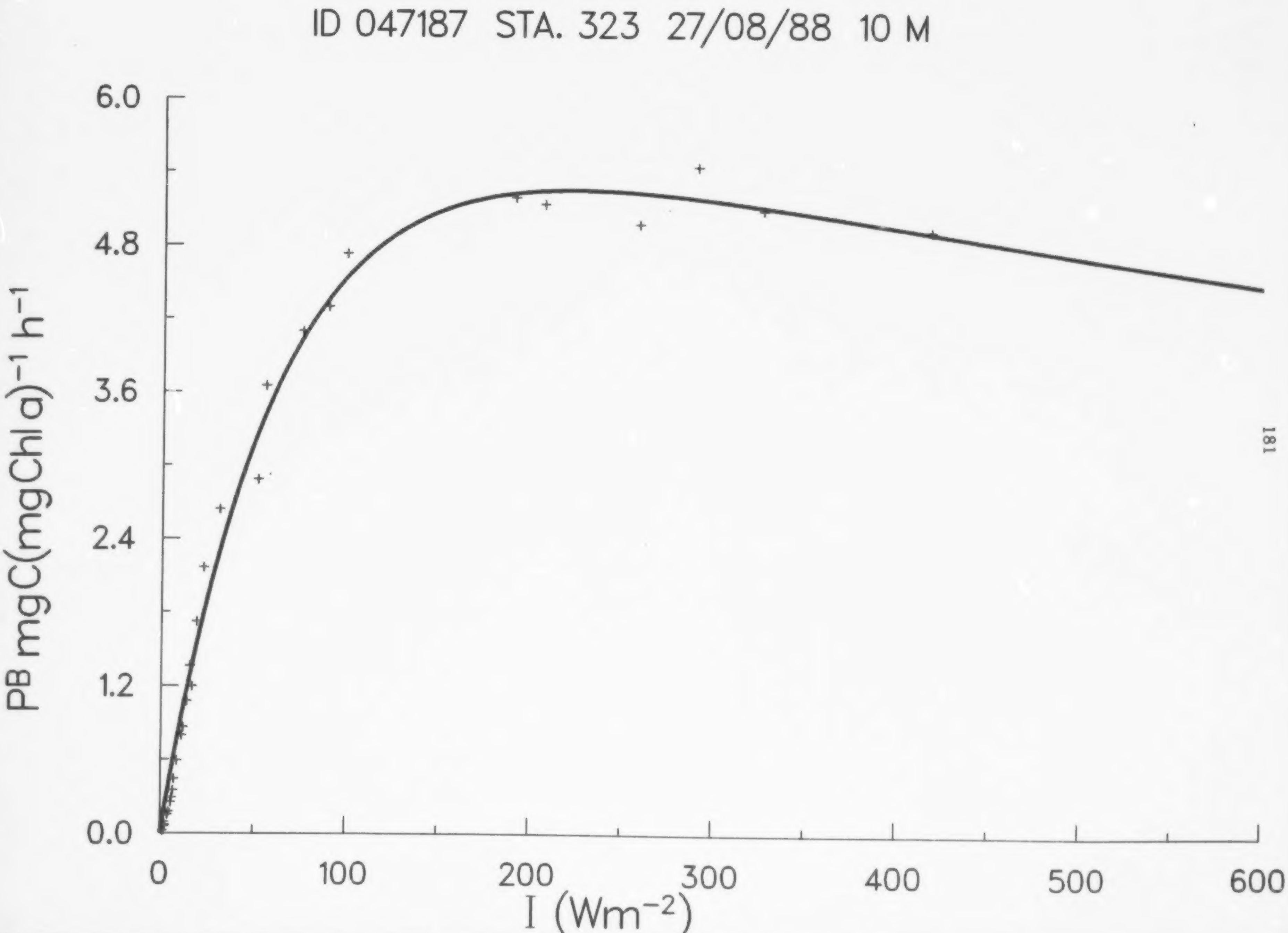
ID 047178 STA. 313 27/08/88 25 M

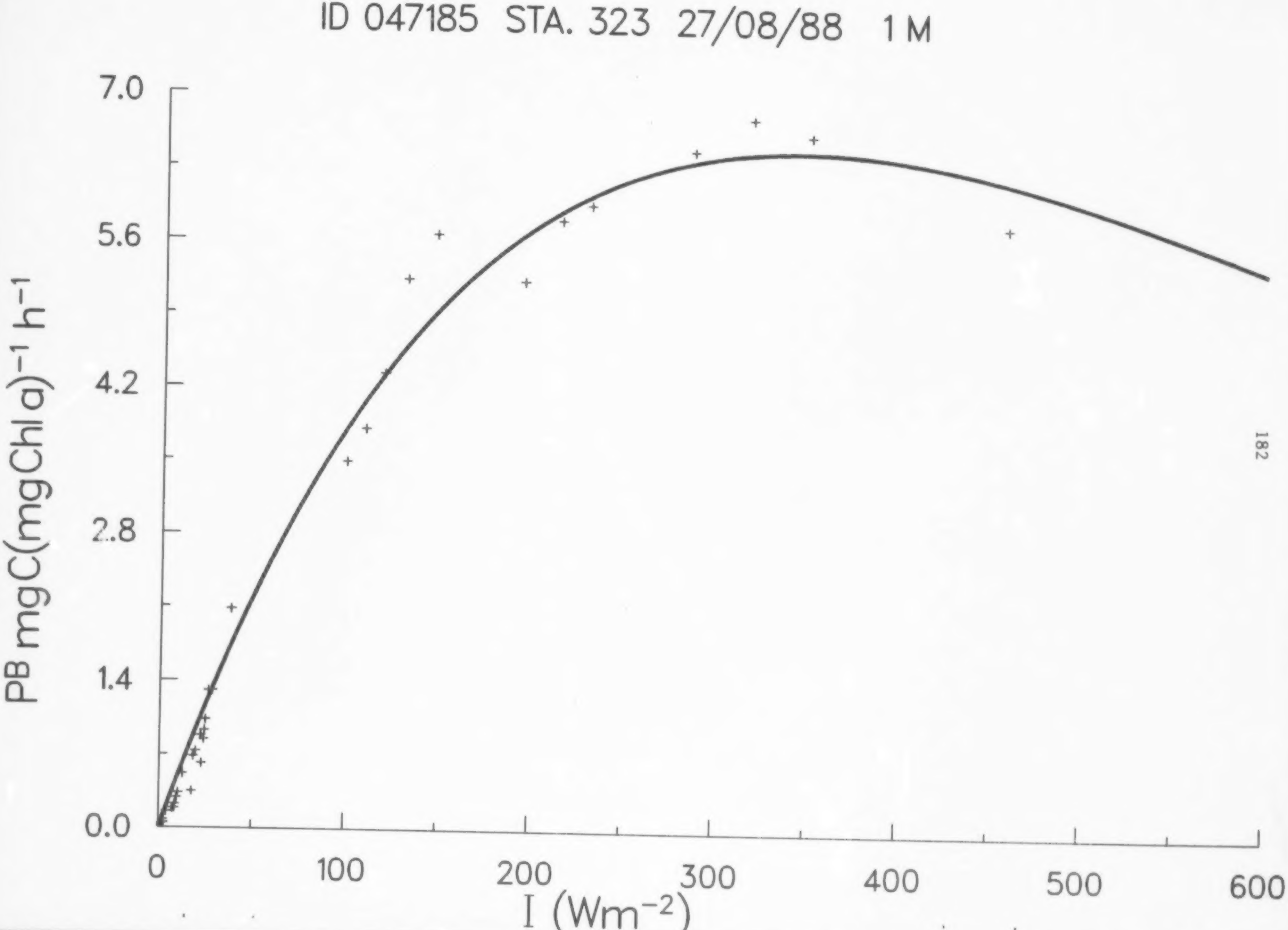



ID 047176 STA. 313 27/08/88 15 M
PB mgC(mgChl a)⁻¹ h⁻¹
0.0
0.7
1.4
2.1
2.8
3.5
I (Wm⁻²)
0
100
200
300
400
500
600

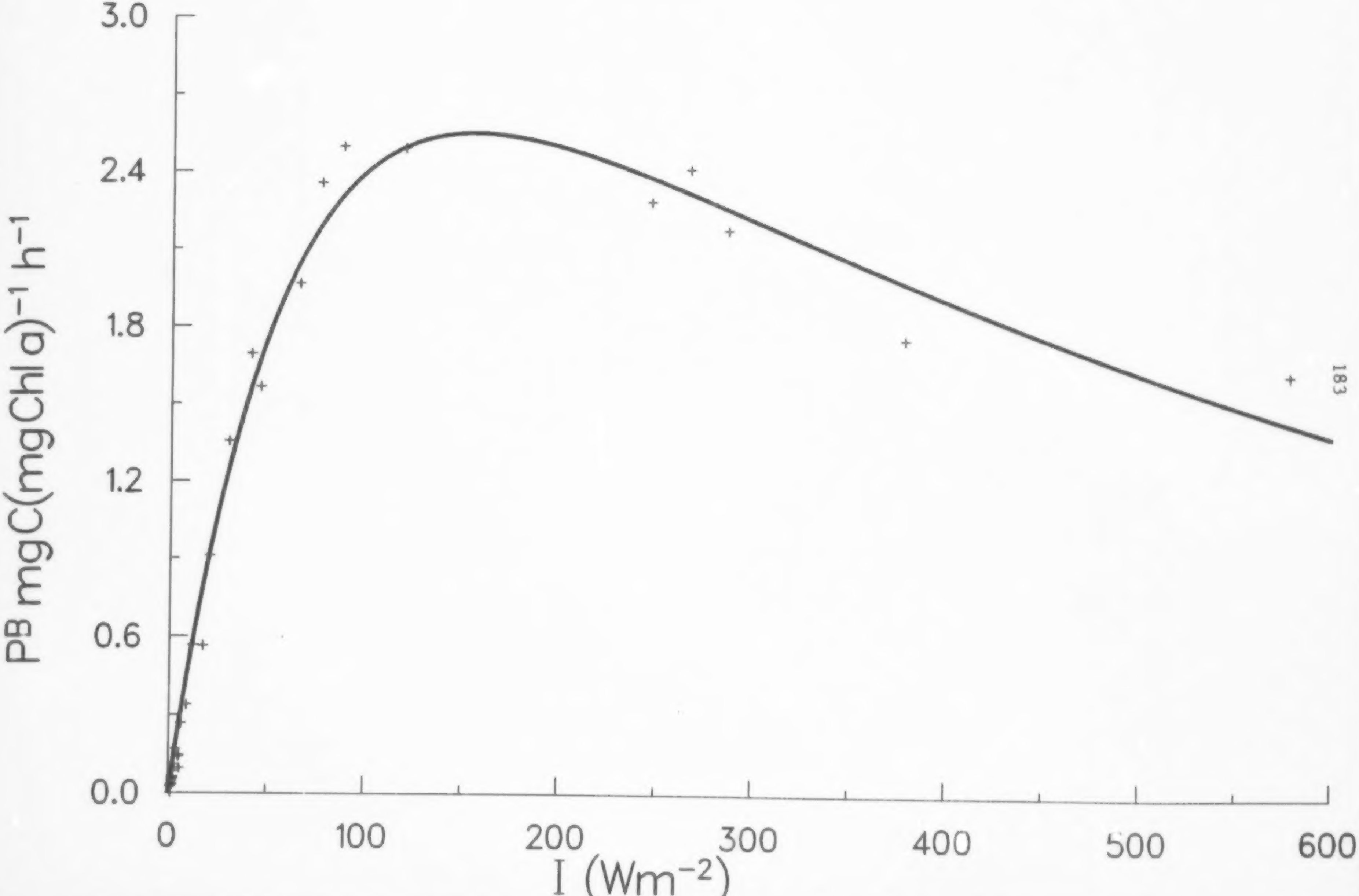

ID 047174 STA. 313 27/08/88 5 M
PB mgC(mgChl a)⁻¹ h⁻¹
0.0
1.0
2.0
3.0
4.0
5.0
0
100
200
300
400
500
600
I (Wm⁻²)

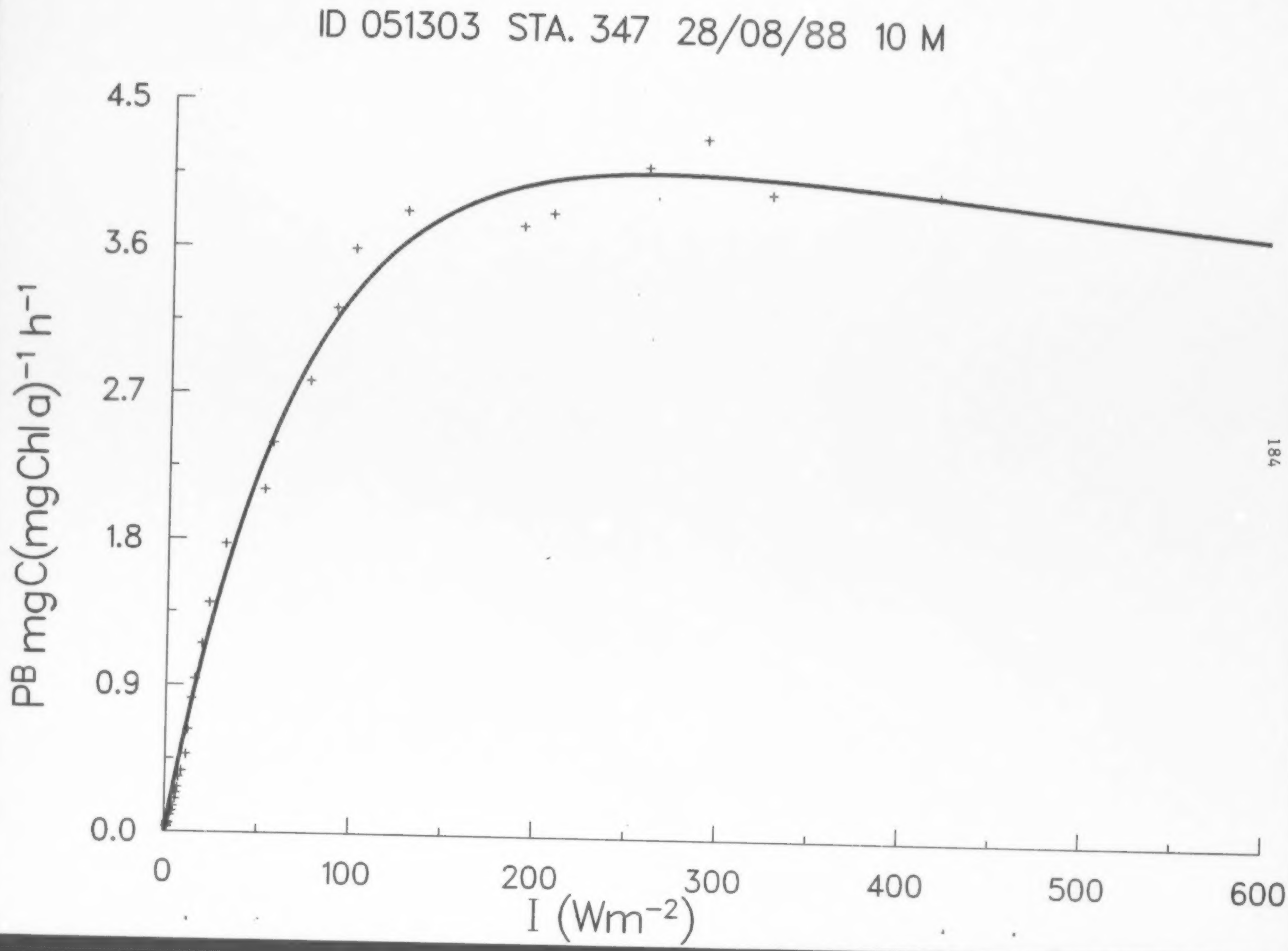

ID 047189 STA. 323 27/08/88 20 M
PB mgC(mgChl a)-1 h-1
5.5
4.4
3.3
2.2
1.1
0.0
0
100
200
300
400
500
600
I (Wm-2)

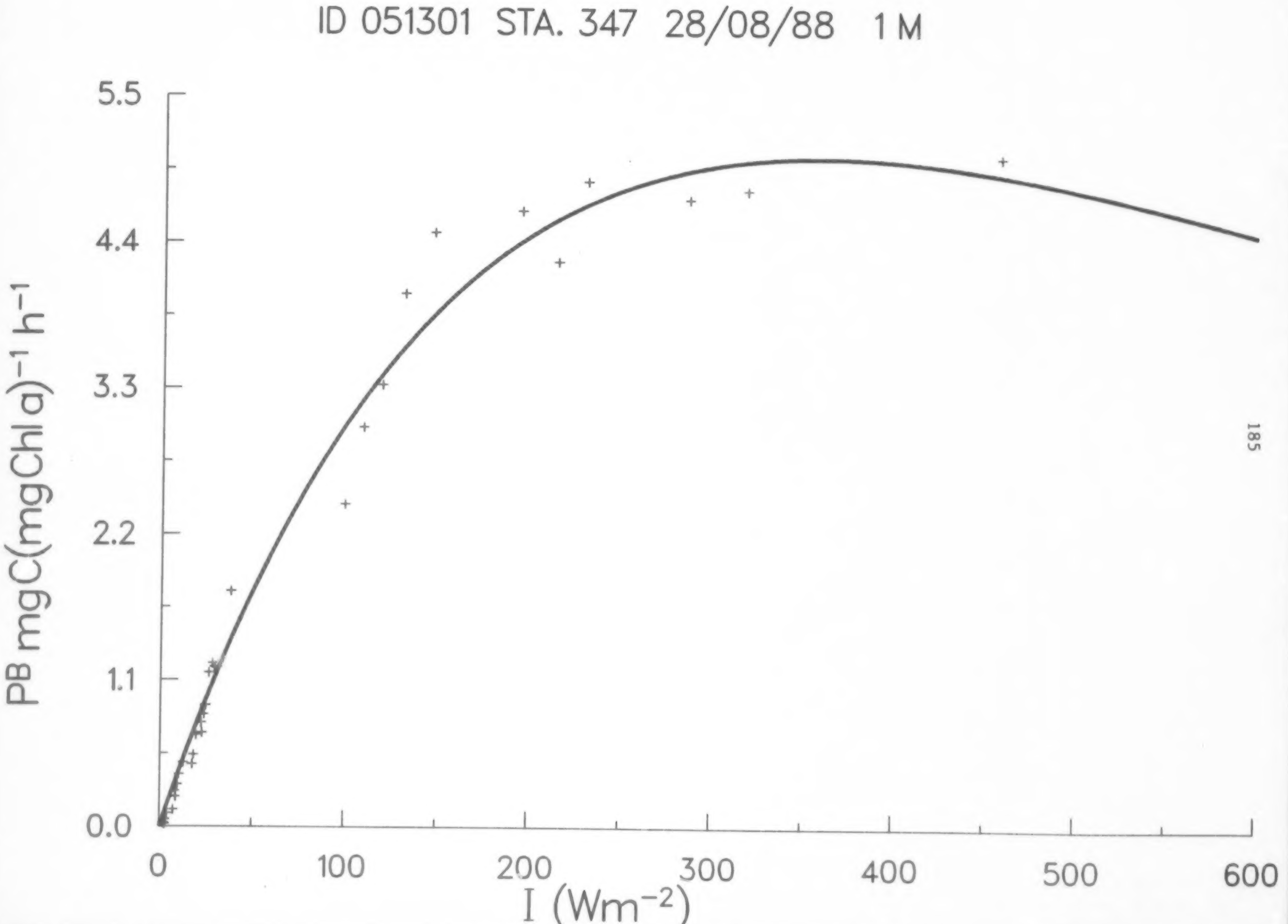

ID 047187 STA. 323 27/08/88 10 M
PB mgC(mgChl a)⁻¹ h⁻¹
6.0
4.8
3.6
2.4
1.2
0.0
0
100
200
300
400
500
600
I (Wm⁻²)


ID 047185 STA. 323 27/08/88 1 M
PB mgC(mgChl a)-1 h-1
7.0
5.6
4.2
2.8
1.4
0.0
0
100
200
300
400
500
600
I (Wm-2)

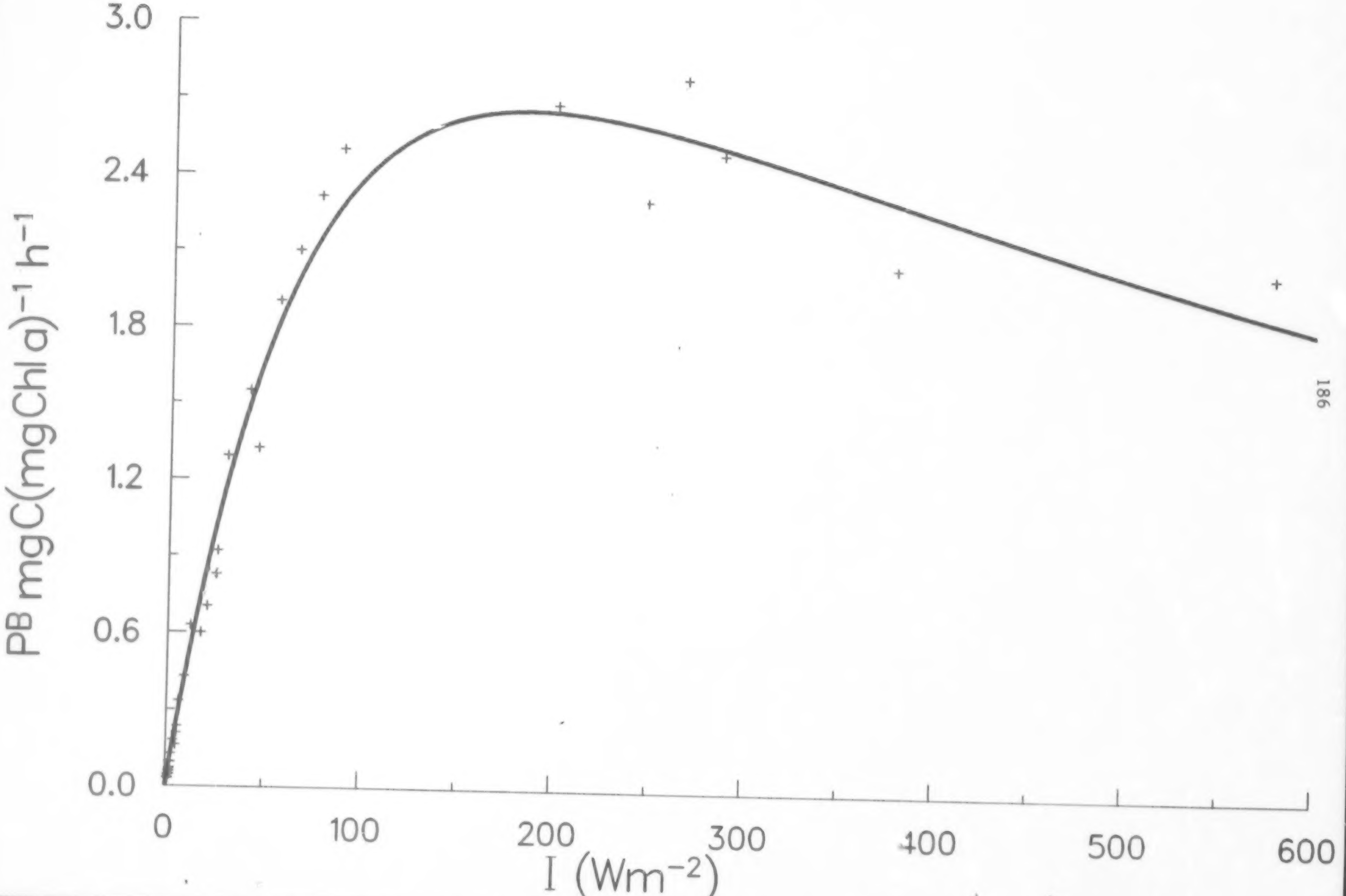
ID 051305 STA. 347 28/08/88 20 M

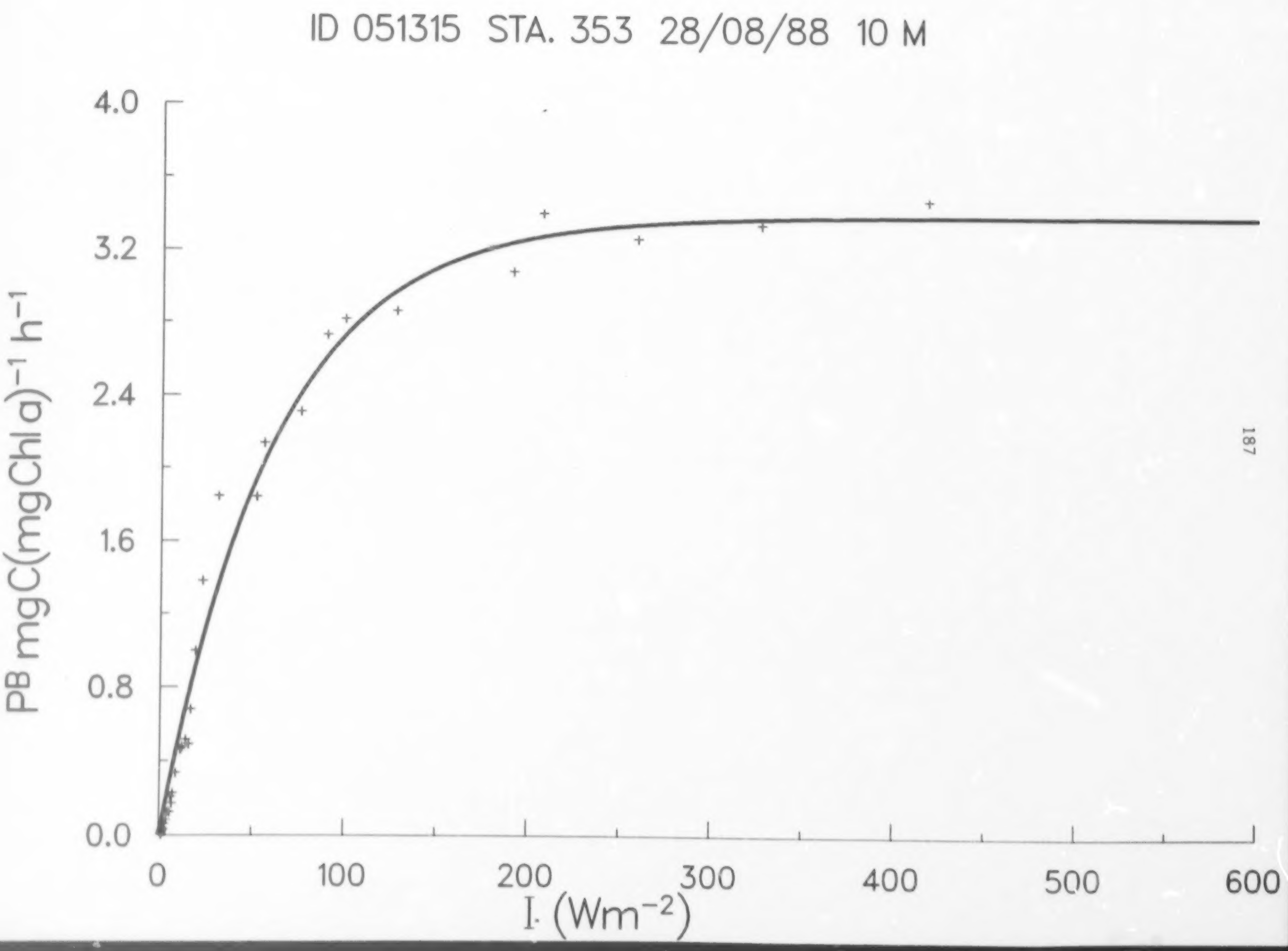


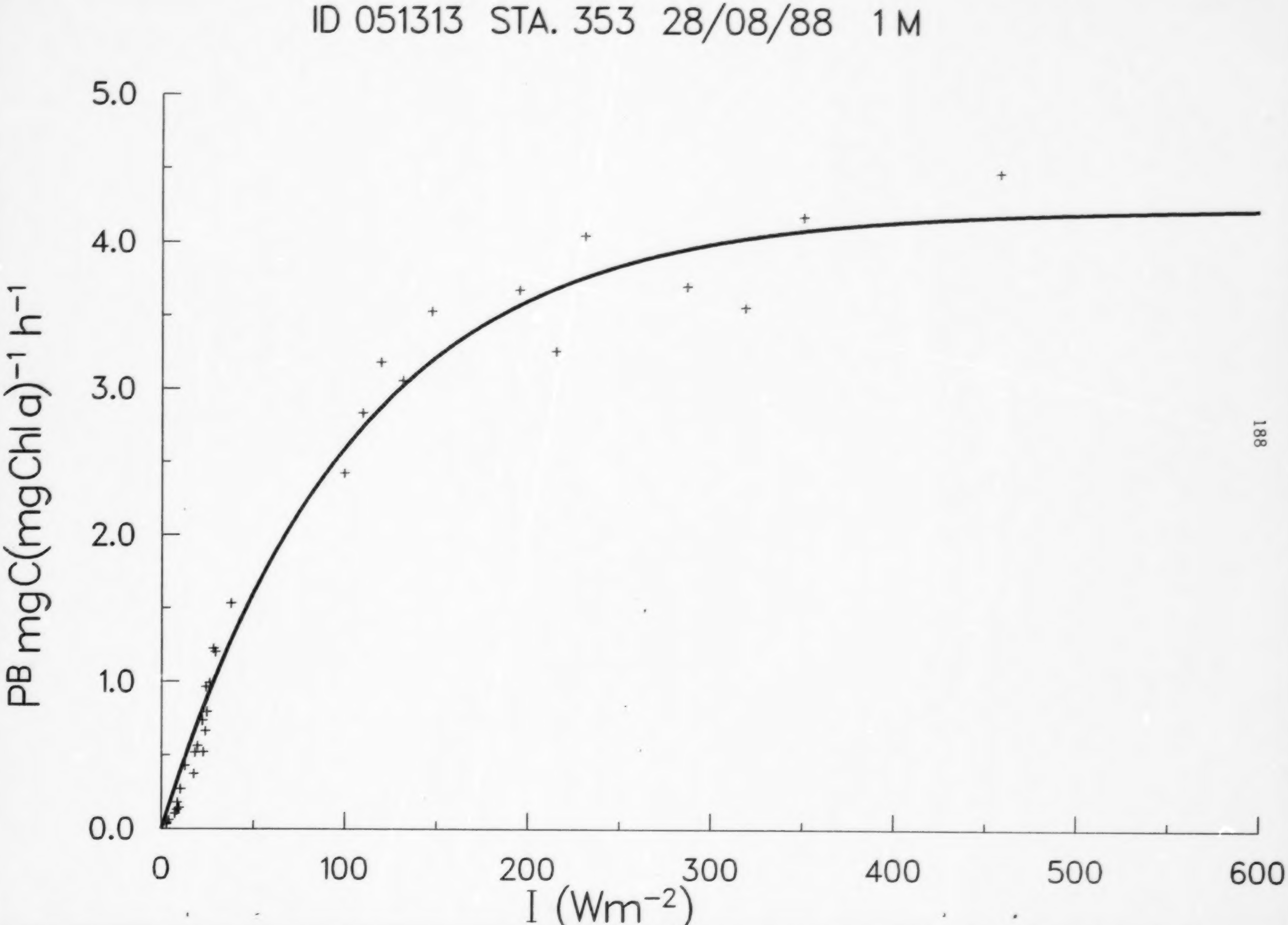

ID 051303 STA. 347 28/08/88 10 M
4.5
3.6
2.7
1.8
0.9
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)

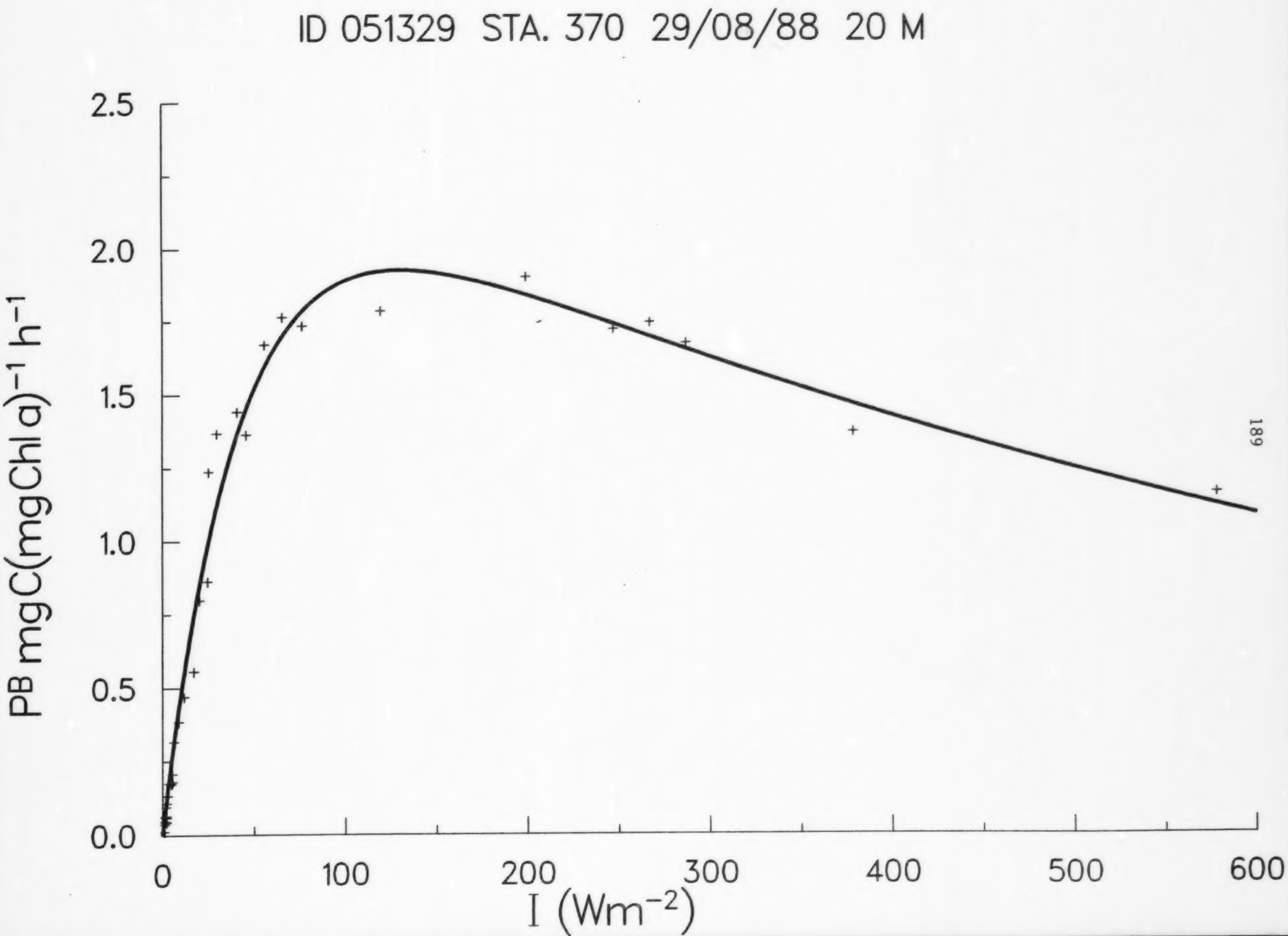

ID 051301 STA. 347 28/08/88 1 M
PB mgC(mgChl a)-1 h-1
5.5
4.4
3.3
2.2
1.1
0.0
0
100
200
300
400
500
600
I (Wm-2)

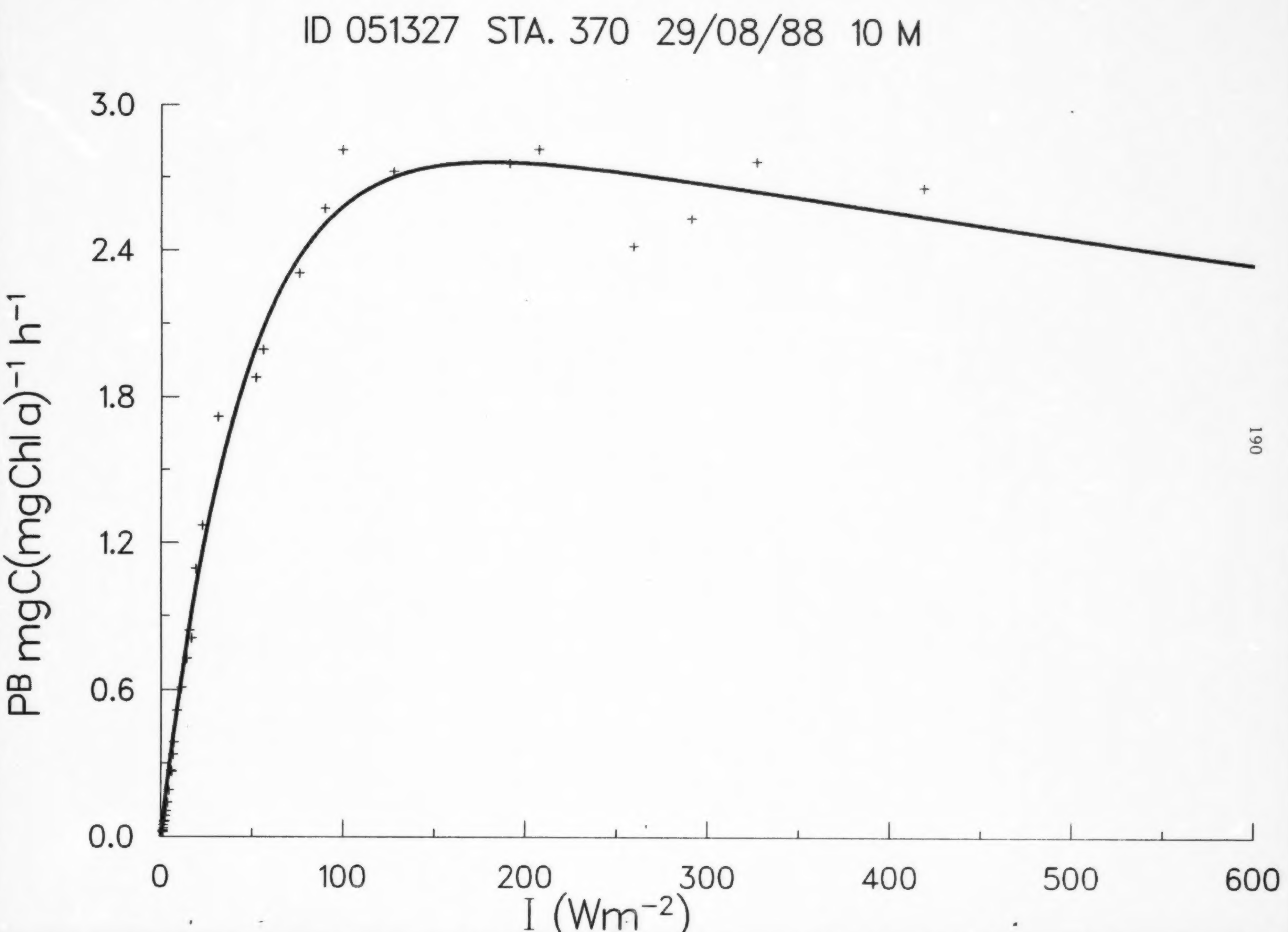
ID 051317 STA. 353 28/08/88 20 M

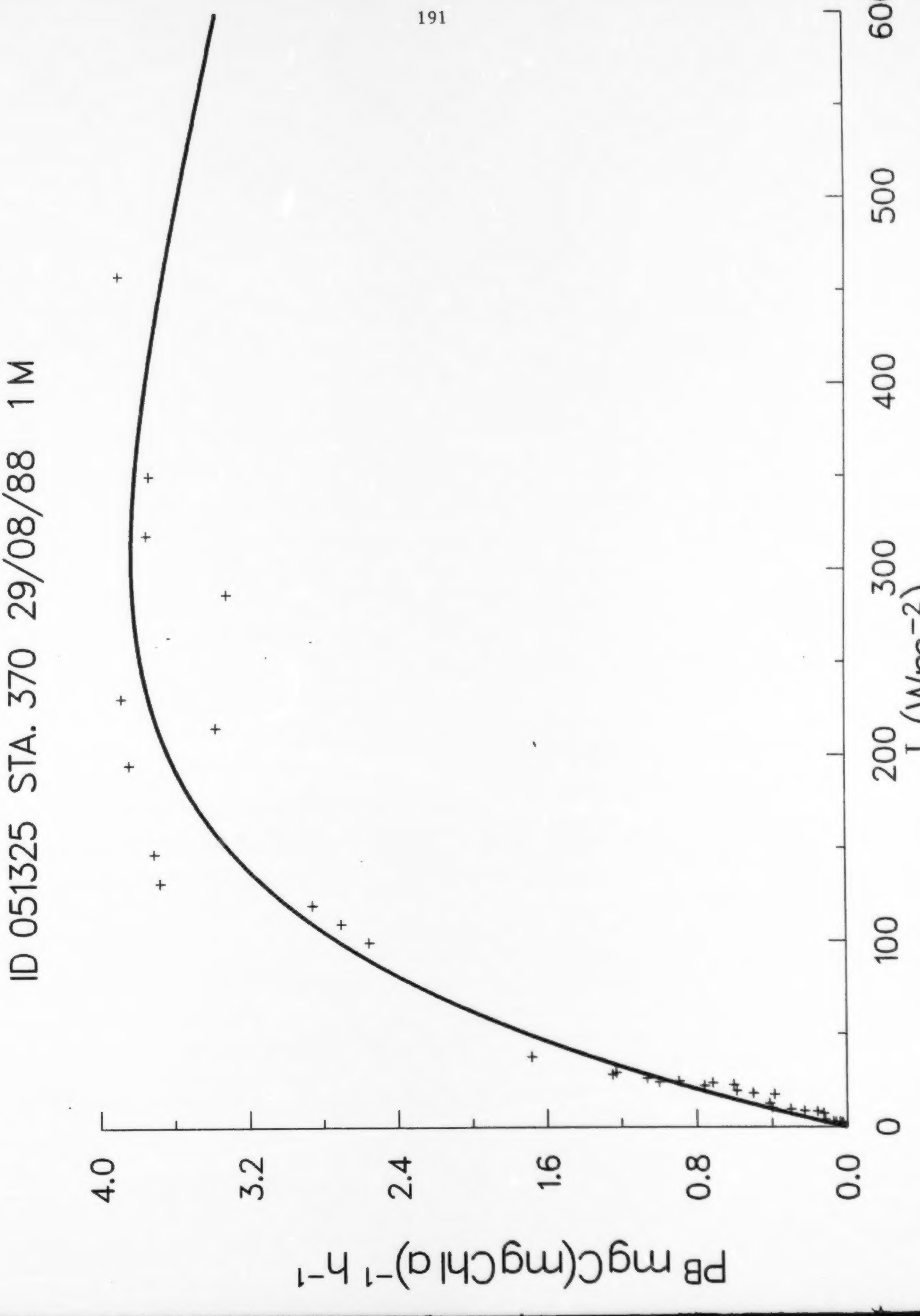


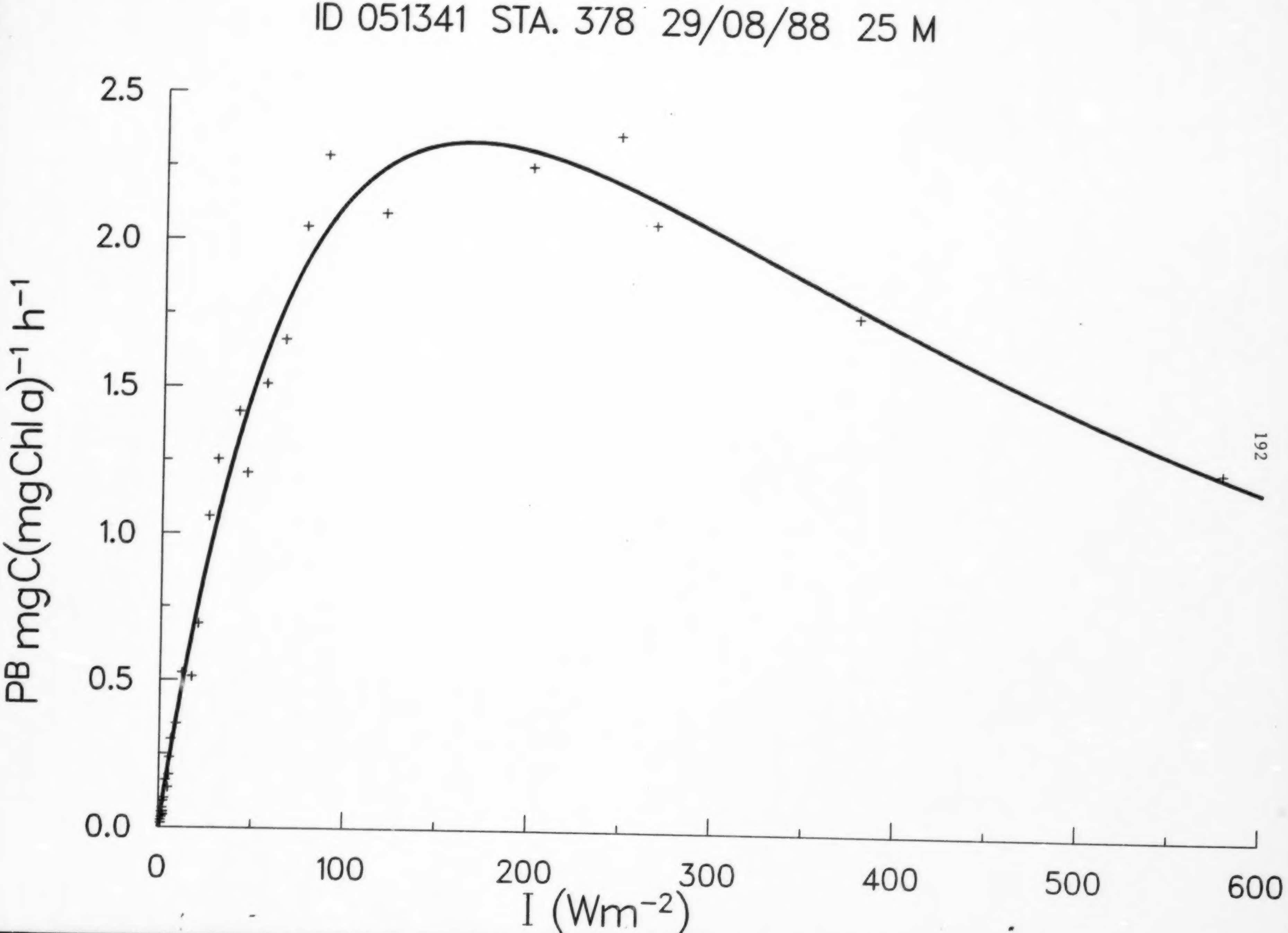

ID 051315 STA. 353 28/08/88 10 M
PB mgC(mgChl a)-1 h-1
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
I. (Wm-2)

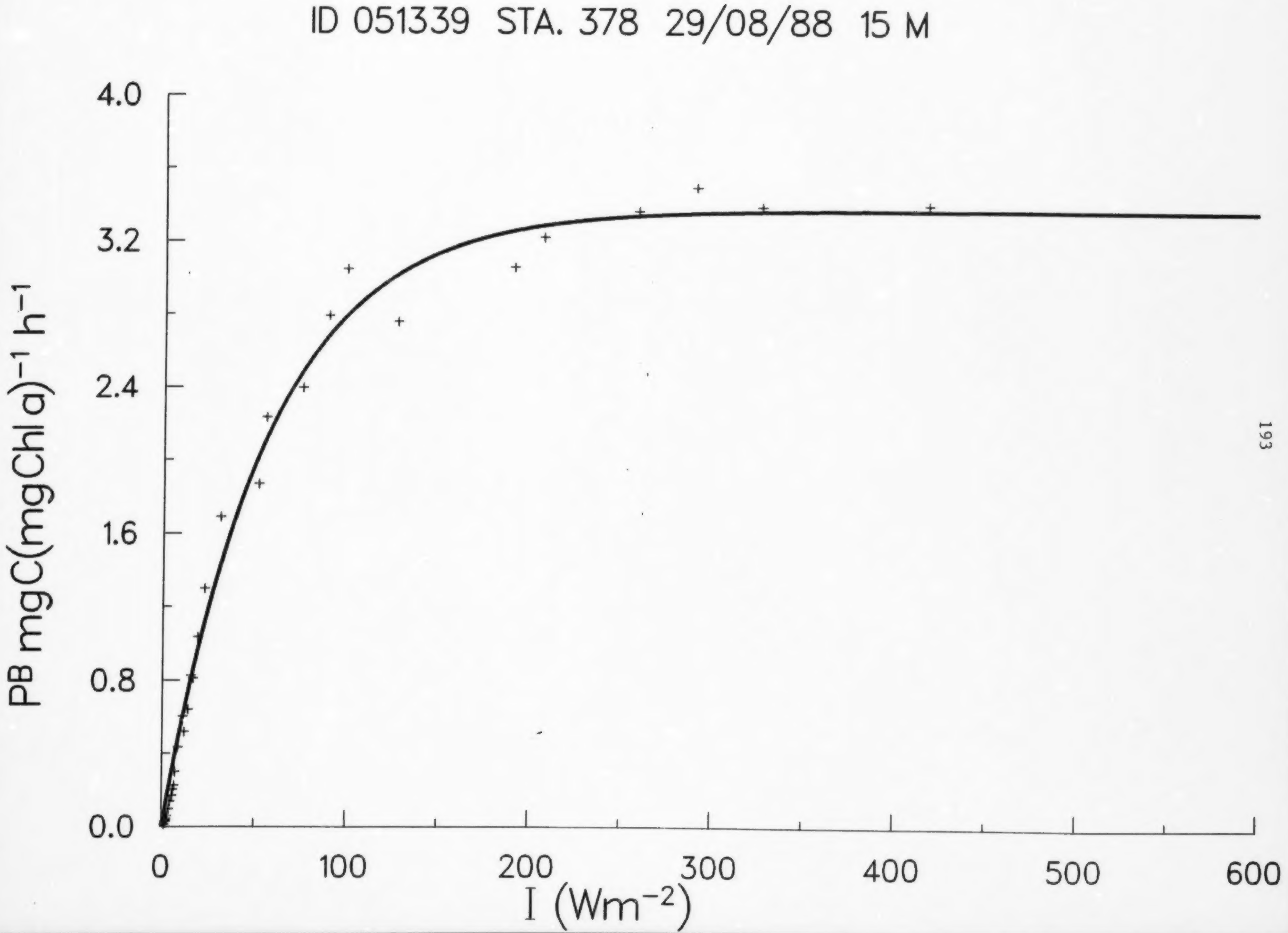

ID 051313 STA. 353 28/08/88 1 M
5.0
4.0
3.0
2.0
1.0
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)

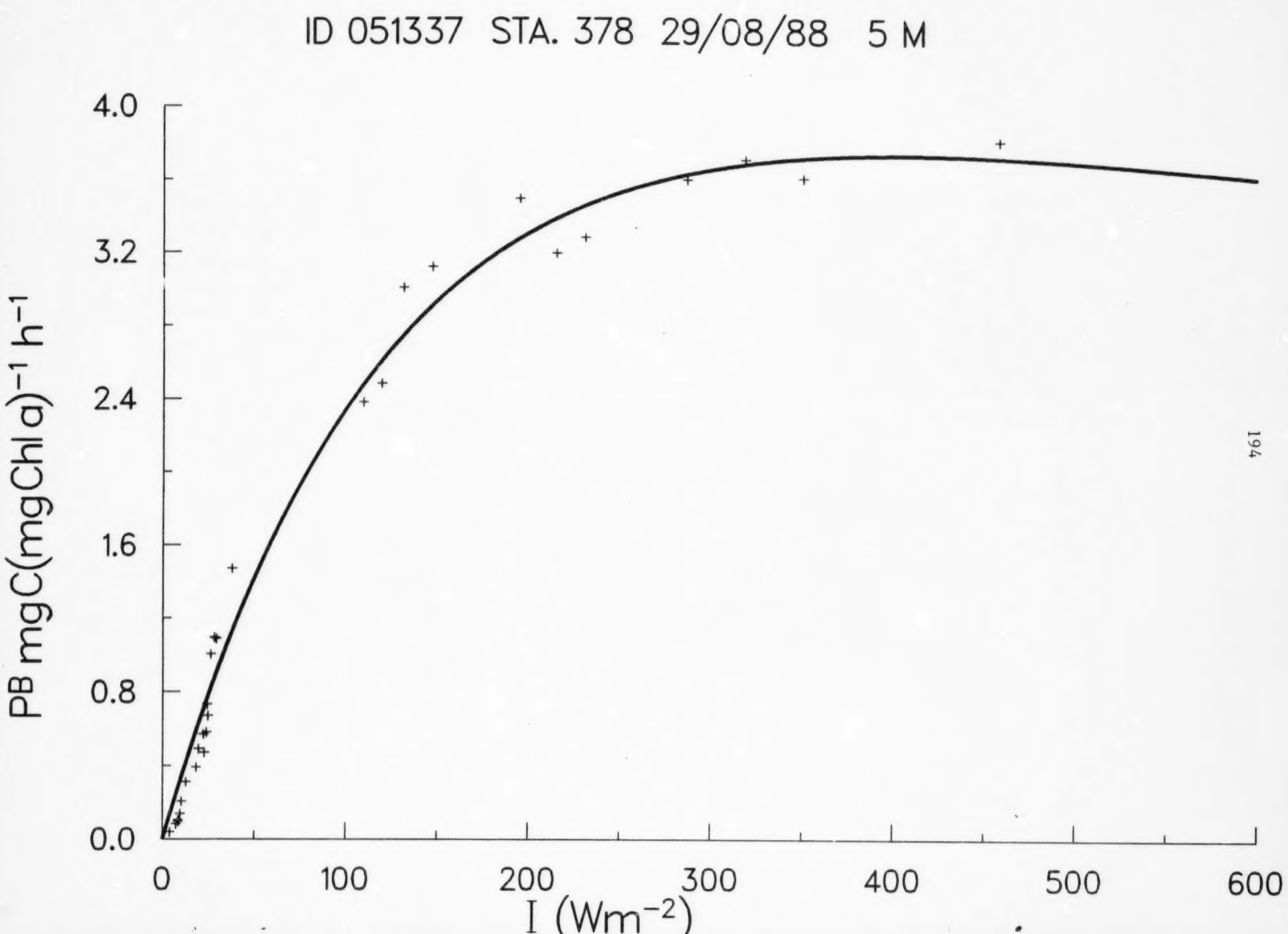

ID 051329 STA. 370 29/08/88 20 M
PB mgC(mgChl a)-1 h-1
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
I (Wm-2)


ID 051327 STA. 370 29/08/88 10 M
3.0
2.4
1.8
1.2
0.6
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)

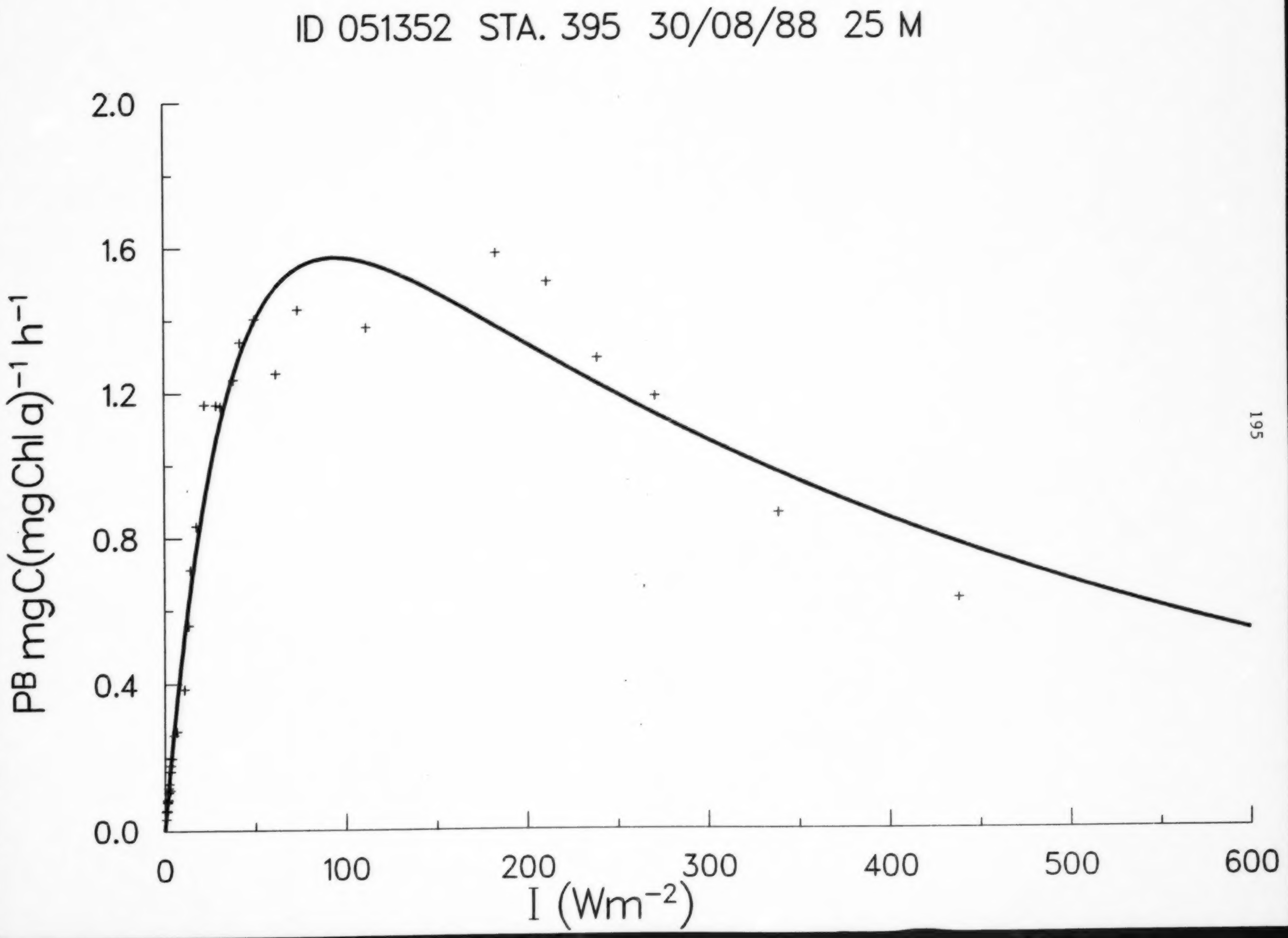

ID 051325 STA. 370 29/08/88 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
I (Wm^{-2})

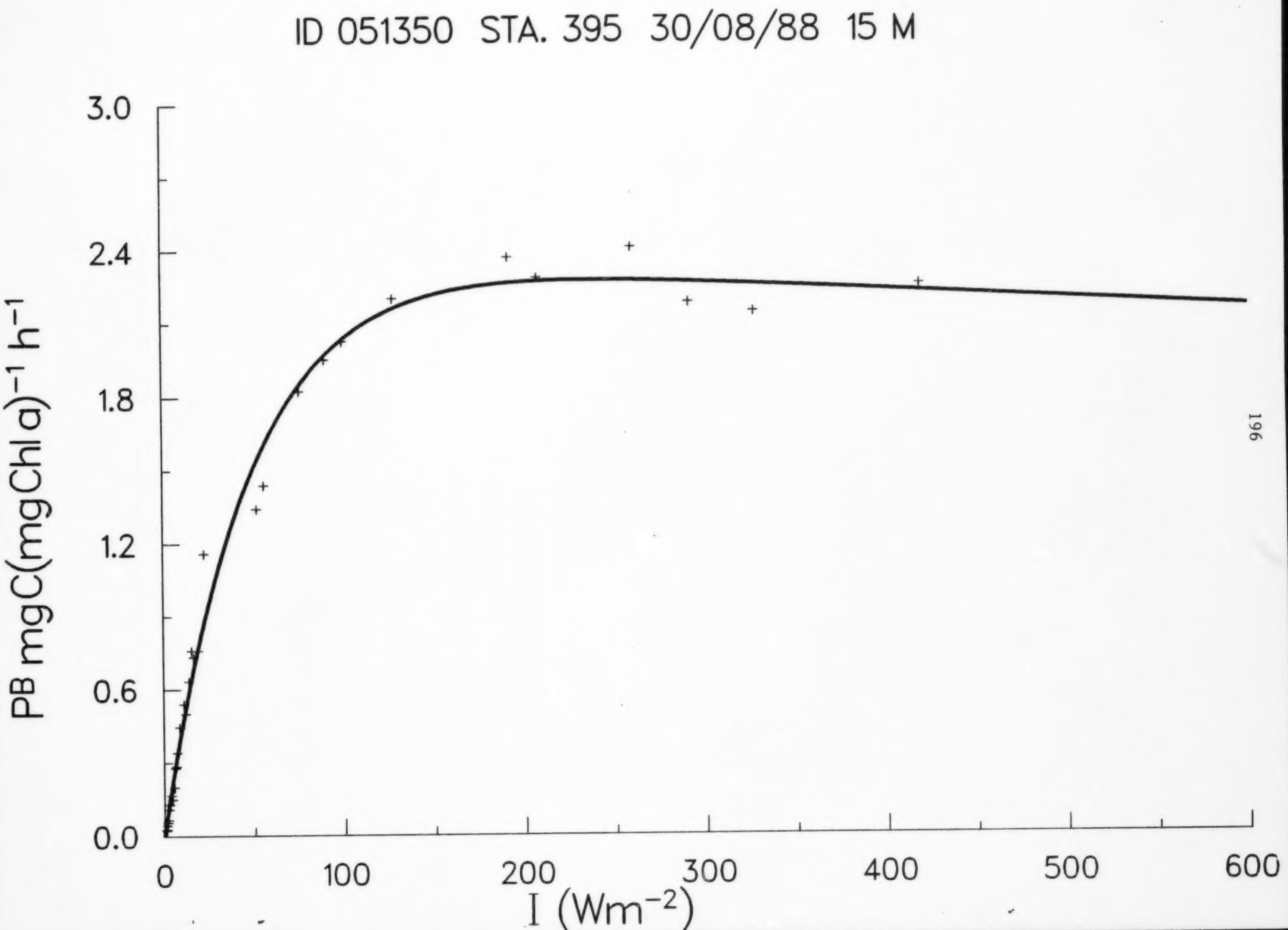

ID 051341 STA. 378 29/08/88 25 M
PB mgC(mgChl a)⁻¹ h⁻¹
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
I (Wm⁻²)

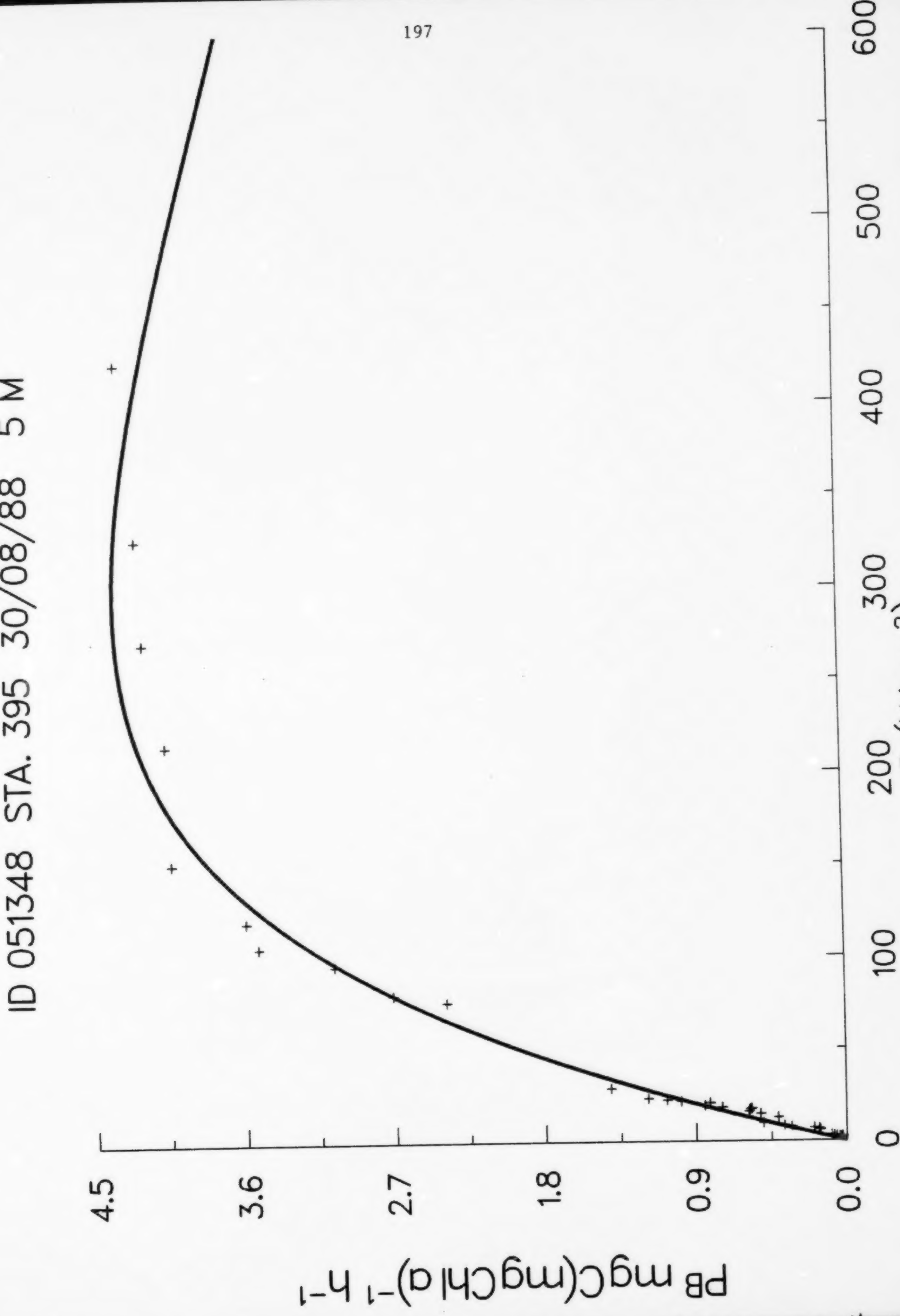

ID 051339 STA. 378 29/08/88 15 M
4.0
3.2
2.4
1.6
0.8
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
I (Wm^{-2})



ID 051337 STA. 378 29/08/88 5 M
4.0
3.2
2.4
1.6
0.8
0.0
PB mgC(mgChl a)-1 h-1
0
100
200
300
400
500
600
I (Wm-2)


ID 051352 STA. 395 30/08/88 25 M
PB mgC(mgChl a)^-1 h^-1
2.0
1.6
1.2
0.8
0.4
0.0
0
100
200
300
400
500
600
I (Wm^-2)


ID 051350 STA. 395 30/08/88 15 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
I (Wm^{-2})


ID 051348 STA. 395 30/08/88 5 M
PB mgC(mgChl a)-1 h-1
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
I (Wm-2)